SIERRA LEONE.

ANNUAL

MEDICAL AND SANITARY

REPORT

1926.

FREETOWN:
Printed at the Government Printing Office
SIERRA LEONE

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1,146—250. 28/5/27.

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ANNUAL

MEDICAL AND SANITARY REPORT

FOR THE YEAR

1926.

I—Administration.

(a) ESTABLISHMENT, INCLUDING VACANCIES, ACTING APPOINTMENTS AND PROMOTIONS.

Medical Staff.

1 Director of Medical and Sanitary Service
1 Deputy Director of Sanitary Service
1 Deputy Director of Medical Service
1 Senior Sanitary Officer
2 Senior Medical Officers
1 Medical Officer of Health
9 Medical Officers of the West African Medical Staff
1 Lady Medical Officer
8 African Medical Officers.

European Nursing Staff.

3 Senior Nursing Sisters
3 Nursing Sisters.

Subordinate Medical and Sanitary Staff.

2 European Superintendent Sanitary Inspectors
30 Dispensers
25 Male Nurses and Apprentices
23 Female Nurses and Probationers
3 Health Visitors
33 Sanitary Inspectors and Learners
1 Head Attendant, Lunatic Asylum
1 Assistant Head Attendant, Lunatic Asylum
1 Matron
10 Assistants (Male)
3 Female Attendants
1 Laboratory Assistant
1 Vaccinator, Freetown.

There are also in addition to above cooks, stokers, gate-keepers, watchmen, laundresses, hospital porters, carpenter and motor ambulance driver, etc.

Clerical Staff.

Sixteen clerks—one first grade, one second grade, five senior third grade, and nine junior third grade.

Temporary Assistance.

Captain J. T. McConkey, Royal Army Medical Corps, was in part time employment as Medical Officer-in-charge of the Survey School at Mount Aureol during the greater part of the year.

Principal Acting Appointments.

(Substantive holders are given in Table I).

Dr. J. Y. Wood acted as Senior Medical Officer from 17th February to 19th March, when he was promoted Senior Medical Officer, *vice* Dr. J. C. Murphy, retired.

Dr. J. Y. Wood also acted as Medical Officer of Health from 1st January to 14th February.

Dr. R. F. Campbell acted as Medical Officer of Health from 15th February to 30th July.

Dr. M. Jackson acted as Senior Medical Officer from 11th November to the end of the year.

New Appointments.

The following new appointments were made during the year :—

Dr. F. V. Hill as Medical Officer, West African Medical Staff, on the 4th August.

Miss M. A. Henry as Nursing Sister, on the 24th April.

Miss L. D. S. McPetrie as Nursing Sister, on the 5th June.

(b) LIST OF ORDINANCES, ETC., AFFECTING PUBLIC HEALTH ENACTED DURING THE YEAR.

Ordinance.

Public Health (Protectorate) Amendment Ordinance, No. 26 of 1926, an Ordinance for promoting Public Health in the Protectorate.

Governor's Orders.

1. Canary Islands Quarantine Order, No. 5 of 1926.
2. Canary Islands Revocation Order, No. 18 of 1926.
3. Accra, Gold Coast Colony, Quarantine Order, No. 20 of 1926.
4. Lagos, Nigeria, Quarantine Order, No. 23 of 1926.
5. Las Palmas Quarantine Order, No. 26 of 1926.

Orders in Council.

1. Kaiyima Sanitary District Order in Council, No. 1 of 1926.
2. Boajibu Sanitary District Order in Council, No. 4 of 1926.
3. Sumbaria Sanitary District Order in Council, No. 5 of 1926.
4. Sherbro Judicial District (Sanitary Authority) Order in Council, No. 6 of 1926.
5. Sumbuya Sanitary District Order in Council, No. 8 of 1926.
6. Mosquito Larvæ (Peninsula Villages) Order in Council, No. 18 of 1926.
7. Boajibu Public Health Order in Council, No. 20 of 1926.

Rules.

1. Yonni Public Health Amendment Rules, No. 2 of 1926.
2. Pujehun Public Health Amendment Rules, No. 3 of 1926
3. Kaiyima Public Health Rules, No. 17 of 1926.
4. Sumbuya Public Health Rules, No. 20 of 1926.
5. Boajibu Public Health Rules, No. 21 of 1926.
6. Sumbaria Public Health Rules, No. 22 of 1926.

(c)—FINANCIAL.

The following table gives the revenue and expenditure for the years 1925 and 1926 :—

Medical Revenue.	1925. £	s.	d.	1926. £	s.	d.
Connaught Hospital receipts	162	3	3	91	16	0
European Hospital receipts	467	9	6	448	10	5
Sundry receipts (out-patients' fees, etc.) ...	309	0	7	397	18	8
Druggist fees (registration)	3	0	0	1	10	6
Maintenance of lunatics	115	3	6	190	8	4
Departmental fines	7	6	7	22	2	0
Total	£1,064	3	5	£1.152	5	11

Medical Expenditure.	1925. £	s.	d.	1926. £	s.	d.
Personal Emoluments	32,574	13	3	33,193	7	3
Other Charges	18,469	17	11	17,191	10	6
Total	£51,044	11	2	£50,384	17	9

Sanitary Revenue.	1925. £	s.	d.	1926. £	s.	d.
Sanitary services (contributions from Bonthe)	232	4	11	204	17	10
Maintenance of persons in quarantine ...	...			15	0	0
Total	£232	4	11	£219	17	10

Sanitary Expenditure.	1925 £	s.	d.	1926. £	s.	d.
Personal Emoluments	7,253	7	8	7,788	11	10
Other Charges	10,521	8	10	12,500	0	7
Total	£17,774	16	6	£20,288	12	5

Ratios of combined Medical and Sanitary votes to total estimated revenue for the past five years :—

	£	
1922	75,270	1 : 11
1923	68,033	1 : 11·1
1924	67,725	1 : 10·6
1925	73,731	1 : 11
1926	78,916	1 : 11·7

NOTE.—This sum is the expenditure controlled by the Director of Medical and Sanitary Service and does not include money spent by the Public Works Department on new buildings, sanitary works, etc.

ANALYSIS OF HOSPITAL EXPENDITURE FOR THE YEAR 1926.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Institution.	Total Number of Patients.	Daily Average Number of Patients.	Hospital Days.	Provisions from Store-keeper. Total.	Fresh Provisions. Total.	5 and 6 per Patient per Day.	Wines, Spirits, Minerals. Tobacco, Ice. Total.	8 per Patient per Day.	7 and 9 per Patient per Day.	Fuel, Light. Total.	Miscellaneous: Cleaning Materials, Hospital Equipment, Replacements.	Total of 5, 6, 8, 11 and 12.	5, 6, 8, 11 and 12 per Patient per Day.	Total Sum recoverable from Paying Patients.
				£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
European Hospital ...	125	3·47	1,267	101 14 5½	211 17 1	0 4 11¼	58 17 4	0 0 11	0 5 10¼	43 19 2¾	49 16 1¼	466 4 2½	0 7 4¼	448 10 5
Connaught Hospital	1,867	77·52	25,357	470 12 2½	972 11 6	0 1 1½	45 14 10	0 0 0¼	0 1 1¾	172 12 0	59 14 4¼	1,721 4 10¾	0 1 4¼	91 16 0
Lunatic Asylum ...	148	90·48	32,890	77 15 6¼	885 17 8	0 0 7	27 3 9	0 0 0¼	0 0 7¼	39 0 3	30 0 0¾	1,059 17 3	0 0 7½	27 0 0
Kissy Infirmaries ...	266	69·63	25,264	71 12 10¼	656 17 1½	0 0 6¾	14 13 11	—	0 0 6¾	53 3 5½	24 5 9½	820 13 1¾	0 0 7¾	—
Bonthe Hospital ...	413	14·53	5,106	30 19 8¾	222 0 8	0 0 11¾	3 12 2½	0 0 0¼	0 1 0	9 4 5½	10 15 9	271 17 4	0 1 1	9 1 6

II—Public Health.

(*a*) GENERAL REMARKS.

(i) General Diseases.

The health of the European community may on the whole be considered satisfactory. The invaliding rate per 100 official residents shows a slight increase to 3·26 as compared with 2·77 for 1925.

The invaliding rate for the past ten years is shown below :—

Year.	Average Number Resident.	Total Number of Invalidings.	Percentage of Invalidings to Average Resident.	Remarks.
1917	110	9	8·18	
1918	97	11	11·34	
1919	...	...	...	Record destroyed in hospital fire of 3rd February, 1920.
1920	133	10	7·51	
1921	144	15	10·41	
1922	109	5	4·58	
1923	102	14	13·72	
1924	164	13	7·92	
1925	180	5	2·77	
1926	184	6	3·26	

Malaria was as in previous years the most common individual cause of illness, there being fifty-nine cases admitted to hospital and sixty-seven treated as out-patients in a total of 128 and 260 respectively.

The following table shows the relative position of malaria as a cause of time lost through sickness (Imperial Troops excluded) during the past five years :—

Year.	Average Number Resident.	Total Sick Days.	Total Days spent on Sick List for Malaria.	Total Days spent on Sick List for other Causes.	Percentage of Malaria Days to Total Days.	Number of Days lost through Malaria for year per 100 Residents.
1922	109	1,426	590	836	4·137	541
1923	102	1,462	319	1,143	21·81	312
1924	164	1,382	446	936	32·27	271
1925	180	1,683	402	1,281	23·88	223
1926	184	1,575	487	1,088	30·92	264

There is a small increase (twenty-nine) in the number of cases treated, and forty-one more days were lost as compared with 1926.

The general health of the African officials compared very favourably with that of the previous year. Only 950 were on the sick list for a total of 5,375 days, as compared with 1,121 and 8,735 in 1925, the most common causes of sickness being malaria and bronchitis. The invaliding figure for the average number resident is reduced from 1·80 to ·60 per cent.

There was no outbreak of epidemic disease during the year and the health of the general community compared favourably with previous years. There was a gratifying continued increase in the number of patients seeking relief at the various hospitals and dispensaries.

The following table shows the total number of cases treated :—

	1924.	1925.	1926.
IN-PATIENTS :			
European	152	115	132
African	3,381	3,207	3,345
OUT-PATIENTS :			
European	395	400	262
African	53,270	61,030	64,236
Total	57,198	64,752	67,975
DEATHS :			
European	3	3	9
African	231	242	265
Total	234	245	274
Percentage of deaths to total number treated ...	·40	·37	·40

showing a further increase of 3,223 cases.

During the past five years the total number of cases treated has risen by over 16,000 per annum.

The following table contrasts the incidence of the more prevalent diseases during the past three years :—

	1924.	1925.	1926.
Smallpox	2	...	...
Chicken-pox	44	68	64
Dysentery	481	191	193
Influenza	...	108	55
Malaria :—Tertian	7	441	136
Quartan	1	53	11
Aestivo-autumnal	11	122	240
Unclassified	2,145	2,489	3,362
Blackwater fever	7	3	7
Pneumonia	100	98	102
Whooping cough	45	111	80
Tuberculosis	131	194	172
Measles	113	37	6
Alcoholism	12	14	23
Yaws	45	551	427

(ii) COMMUNICABLE DISEASES.

Malaria.—The number of patients seeking treatment for this disease shows an increase of 531. The deaths from malaria were 7, a case mortality of ·16 per cent.

Blackwater Fever.—Seven cases were reported during the year with two deaths. Four cases (one fatal) were Europeans and the remaining three cases (one fatal) were Syrians. Three cases in addition are reported to have died of blackwater contracted shortly after their arrival in England from Sierra Leone. Of these, one was the wife af a Government official, one the wife of a non-official, and the third a non-official. No history of these cases is available.

Trypanosomiasis.—Four cases only were reported.

Smallpox.—No case occurred in the Colony or Protectorate during the year.

Chicken-pox.—Sixty-four cases were reported.

Dysentery.—193 cases were reported—a slight decrease on the number for the previous year.

Tuberculosis.—172 cases were treated—70 in-patients and 102 out-patients. There were 27 deaths.

Venereal Diseases.—2,575 cases: 1,701 of gonorrhœa and 874 of syphilis attended for treatment. These figures are of little assistance in estimating the prevalence of venereal diseases, as the native rarely reports unless complications arise. Gonorrhœa is regarded by him with slightly less concern than is a cold in the head by the European.

TABLE OF INCIDENCE.

Disease.	1922.	1923.	1924.	1925.	1926.
Tuberculosis	91	138	131	194	172
Dysentery	252	306	481	199	193
Gonorrhœa	969	1,126	1,248	1,523	1,701
Syphilis	647	723	919	1,005	874

Influenza.—Fifty-five cases were reported. A mild epidemic of thirty-nine cases occurred in a girls school at Moyamba.

Leprosy.—Forty-three cases only were reported from all stations as against fifty-eight in the previous year.

Ankylostomiasis.—The following table gives the numbers examined with percentage of infection:—

Place.	Number Examined.	Number Infected with Ankylostomes.	Per Cent.	Remarks.
Freetown ...	218	16	7·33	Connaught Hospital laboratory
Freetown ...	22	2	9·09	Freetown Prison
Bonthe ...	...	...	...	.....
Kissy	No report			.....
Bo	89	28	43·75	In and out-patients, Bo School.
Port Loko ...	80	22	27·5	Court messengers with their wives and children
Moyamba ...	284	115	40·49	Agricultural Training College and Prison
Makeni ...	30	11	36·6	Court messengers and soldiers
Daru	35	20	57·14	Soldiers, etc.
Sumbuya ...	...	...	...	.....
Kaiyima ...	100	46	46	In and out-patients

(*b*) VITAL STATISTICS.

(i) GENERAL POPULATION.

It is impossible to give even a rough estimate of the population year by year in Sierra Leone; the 1921 census gives the following figures:—

Colony and Protectorate	1,541,311
Colony	85,163
Colony excluding Freetown	41,021
Freetown	44,142

none of these, except perhaps Freetown figures, can be taken as accurate.

Registration.—Although there are in the Colony seventeen registration centres, and in the Protectorate eleven centres, only in Freetown (two centres) is registration anything like accurate. Again, although the registration of deaths and births is compulsory, only deaths can be considered as accurate, as one cannot be buried without a permit, which is only obtained by registration; births on the other hand are only registered as the spirit moves the parents, or as they are rounded up by inspectors and infant welfare nurses. Legislation is being enacted which will strengthen our hands as regards birth registration, by lessening the period in which a

child must be registered and by putting the control of registration of births and deaths completely in the hands of the Sanitary Department. During the year 1926 there were 1,231 deaths in Freetown—720 males, 511 females; during the same period 1,074 births were registered, being 552 males and 522 females. The deaths of infants, twelve months and under, during the period were 318, viz., 162 males and 156 females, giving an infant mortality rate of 296. As all infant deaths are registered and not all births, this must be considered an inflated figure. It is slightly higher than 1925, but in that year twenty-eight more births and only two more infant deaths were registered.

The following table gives the birth, death and infant mortality rate for the past four years :—

Year.	Population, 1921.	Births Registered.	Birth Rate.	Death registered.	Death-rate.	Number of Death under Twelve Months.	Infant Mortality Rate.
1923	44,142	855	19·3	1,332	30	373	437
1924	...	982	22·2	1,143	25·9	316	321
1925	...	1,102	25	1,124	25·5	321	291
1926	...	1,074	24	1,231	27·9	318	296

It will be seen that the death-rate for 1926 is higher than the preceding year but lower than 1923.

As only 25 per cent. of these deaths are certified by medical practitioners, it is difficult to analyse them or get any useful information from these figures.

The following table gives the births and deaths from all registration centres for the year, and the infant mortality rate for Freetown and the Colony :—

DISTRICT.	BIRTHS.			DEATHS.			Deaths under Twelve Months.		
	Male.	Female.	Total.	Male,	Female.	Total.	Male.	Female.	Total.
Colony.									
Freetown ...	484	456	940	627	425	1,052	139	125	264
Cline Town ...	68	66	134	93	86	179	23	31	54
Port of Sherbro	40	37	77	61	52	113	18	11	29
Regent	17	18	35	7	13	20	1	4	5
Waterloo ...	58	74	132	76	39	115	12	6	18
Songo Town ...	69	50	119	59	48	107	22	16	38
Bananas ...	15	11	26	8	5	13	1	1	2
Hastings ...	24	19	43	24	19	43	6	3	9
Hamilton ...	15	14	29	15	11	26	1	5	6
Tombo	43	36	79	32	29	61	7	10	17
York	16	19	35	21	12	33	6	3	9
Kent	15	15	30	7	7	14	1	3	4
Wellington ...	11	15	26	16	14	30	3	1	4
Murray Town ...	29	25	54	21	24	45	2	5	7
Tassoh	48	36	84	43	21	64	20	9	29
Kissy	23	18	41	42	26	68	6	2	8
Wilberforce ...	26	29	55	26	21	47	9	8	17
Total ...	1,001	938	1,939	1,178	852	2,030	277	243	520
Protectorate.									
Ronieta ...	...	1	1	...	1	1	...	1	1
Karene ...	...	6	6	...	...	...	...	...	...
Port Loko ...	6	5	11	1	...	1	...	...	...
Pendembu ...	1	1	2	...	...	...	...	...	...
Kenema ...	4	3	7	...	...	...	...	...	...
Moyamba ...	5	6	11	1	...	1	...	...	...
Bonthe	24	30	54	59	63	122	2	2	4
Bombali ...	3	7	10	1	1	2	...	1	1
Sumbuya ...	1	3	4	...	...	...	...	...	...
Pujehun ...	...	...	...	...	1	1	...	...	...
Gbangbama ...	2	1	3	...	...	...	...	...	...
Total ...	46	63	109	62	66	128	2	4	6

Infant mortality rate: Freetown including Cline Town, 296.

Colony other than Freetown, 234.

(ii) Health of European Officials (excluding Imperial Forces).

Table showing Sick, Invaliding, and Death-rates of European Officials.

	1924.	1925.	1926.
Total number of officials resident	198	200	234
Average number resident	164	180	184
Total number on sick list	155	176	181
Total number of days on sick list	1,382	1,683	1,575
Average daily number on sick list	3·77	4·61	4·31
Percentage of daily sick to average number of residents	2·29	2·56	2·34
Average number of days on sick list to each patient ...	8·91	9·50	8·70
Average sick time to each resident	8·42	9·35	8·55
Total number invalided	13	5	6
Percentage of invalidings to total residents	6·56	2·50	2·56
Percentage of invalidings to average number resident	7·92	2·77	3·26
Total deaths	1	2	1
Percentage of deaths to total residents	0·50	1·00	·42
Percentage of deaths to average number resident ...	0·60	1·11	·54

Causes of Invaliding and Deaths of European Officials.

Cause.	Invalided.	Died.
Neurasthenia	2	...
Duodenal ulcer	1	...
Neurasthenia and V. D. H.	1	...
Chronic bronchitis and asthma	1	...
Delusional insanity	1	...
Blackwater fever and acute nephritis	...	1
Total	6	1

(iii) Health of European Non-officials.

Table showing Sick, Invaliding and Death-rates of European Non-officials.

	1926.
Total number of non-officials resident	390
Average number resident	299
Total number on sick list	46
Percentage of sick to average number of residents	15·38
Average number of days on sick list to each patient	...
Average sick time to each resident	...
Total number invalided	13
Percentage of invalidings to total residents	3·33
Percentage of invalidings to average number resident	4·34
Total deaths	8
Percentage of deaths to total residents	2·05
Percentage of deaths to average number resident	2·67

Causes of Invaliding and Deaths of European Non-officials.

Cause.	Invalided.	Died.
Sun trauma	...	1
Drowning	...	2
Septicæmia	...	1
Malaria	4	...
Kidney disease	1	1
Cancer	...	1
Tuberculosis	1	...
Amputation of foot (gangrene)	1	...
Neurasthenia	2	...
Debility after long service	2	...
Accident (injury to left eye)	1	...
Heart failure(degeneration of the heart)	...	1
Hæmorrhage	1	...
Alcoholic poison and delirium tremens	...	1
Total	13	8

(iv) Health of African Officials.

Table showing the Sick, Invaliding, and Death-rates of African Officials.

	1924.	1925.	1926.
Total number of officials resident	922	1,009	1,200
Average number resident	900	997	1,000
Total number on sick list	1,009	1,121	950
Total number of days on sick list	8,920	8,735	5,375
Average daily number on sick list	24·37	23·93	14·72
Percentage of daily sick to average number resident ...	2·70	2·40	1·47
Average number of days on sick list to each patient ...	8·84	7·79	5·65
Average sick time to each resident	9·91	8·76	5·37
Total number invalided	18	18	6
Percentage of invalidings to total resident	1·81	1·78	·50
Percentage of invalidings to average number resident ...	2·00	1·80	·60
Total deaths	5	10	4
Percentage of deaths to total residents	·59	·99	·33
Percentage of deaths to average number resident ...	·55	1·00	·40

Causes af Invaliding and Deaths of African Officials.

Cause.	Invalided.	Died.
Neurasthenia	1	...
Double inguinal hernia and myocarditis	1	...
Facial paralysis (right side) and epiphora	1	...
Epilepsy	1	...
Premature senility following on a cerebral hæmorrhage	1	...
Pulmonary tuberculosis	1	1
Cerebral hæmorrhage	...	1
Enteritis	...	1
Pneumonia	...	1
Total	6	4

TABLE SHOWING THE COMPARATIVE HEALTH OF AFRICAN OFFICIALS FOR THE LAST TEN YEARS.

Year.	Average Number of Officials.	Number on Sick List.	Number of Days off Duty through Sickness.	Average Sick Time to each Official.	Number Invalided.	Percentage of Invaliding to Average Number.	Number of Deaths.	Percentage of Deaths to Average Number.
1917	550	1,042	4,853	8·82	21	3·81	1	0·18
1918*	550	866	37,878	68·86	30	5·45	51	9·27
1919	Records	destroyed in hospital	fire of 3rd	February, 1920.				
1920	750	1,862	5,742	7·60	23	3·06	9	1·20
1921	750	1,248	7,780	10·37	24	3·20	6	1·20
1922	750	1,071	7,887	10·38	7	0·93	6	0·80
1923	750	879	7,586	10·11	13	1·73	7	0·93
1924	900	1,009	8,920	9·91	18	2·00	5	0·55
1925	997	1,121	8,735	8·76	18	1·80	10	1·00
1926	1,000	950	5,375	5·37	6	0·60	4	0·40

*Year of Pandemic Influenza.

(v)—Health of Troops and Police.

Imperial Troops (European)—Summary.

	1924.	1925.	1926.
1. Average strength	278	283	268
2. Total number on sick list	566	647	660
3. Percentage of sick to average strength	203·9	228·62	316·41*
4. Total number invalided	9	4	6
5. Percentage of invaliding to average number of residents	3·5	1·41	2·23
6. Total number of deaths	1	1	...
7. Percentage of deaths to average number resident ...	·36	·35	...

West African Frontier Force (Non-European).

Average Strength of Battalion in 1926.	Total Number of Deaths	Death-rate per 1,000.	Total Number of Men on Sick List.	Sick Rate per 1,000.
345	...	...	621	1,800

Police.

Total Number of Men.	Total Number of Deaths.	Death-rate per 1,000.	Total Number of Men on Sick List.	Sick Rate per 1,000.
303	1	3·30	188	620·46

vi—Prisoners.

Freetown Prison.	1924.	1925.	1926.
Total number of prisoners admitted	1,190	985	1,140
Average strength	259	245	298
Total deaths	10	5	5
Total number of prisoners on sick list	188	137	288
Daily average number on sick list	9	4	7
Daily sick rate per 1,000 of average strength ...	23·16	16·86	23·48
Death-rate per 1,000 of average strength	38·61	20·40	16·77

Prison.	Daily Average Number in Custody in 1926.	Daily Sick Rate per 1,000 of Average Strength.	Death-rate per 1,000 of Average Strength.
Freetown	298	23·48	16·77
Batkanu	17	30·00	...
Kabala	17	10·64	...
Moyamba	46	12·47	...
Kenema	55	22·03	36·36
Pujehun	27	29·25	37·03

* This figure is not comparable to the corresponding one for civilians as it includes every one who reports himself to a medical officer for any ailment however trivial; whereas the civilian is only shown as sick when he is actually off duty on account of illness.

III—Hospitals and Dispensaries.

Connaught Hospital.

The capacity of the Connaught Hospital remained the same as last year—eighty beds and five cots.

The administrative offices, stores, laboratory, dispensary and out-patient departments are still in the old Law Court buildings.

The new out-patients' block, store and administrative offices made very rapid progress and should be completed and occupied during 1927.

The total number of admissions during the year was 1,867 with 164 deaths, as compared with 1,860 and 134 in 1925.

The prevailing diseases were malaria, bronchitis, pneumonia, ulcers, injuries, intestinal parasites and those of the digestive system.

The total in-patients and maternity in-patients for the past ten years are given in the following table :—

Year.	Total In-patients.	Maternity In-patients.	Remarks.
1917	1,664	105	
1918	1,493	?	
1919	1,477	93	
1920	602	133	(Hospital burnt—temporary hospital of one male ward and four maternity wards.)
1921	737	142	(New hospitals opened—four wards in January, including maternity ward of eleven beds. Two more wards in August.)
1922	1,282	169	
1923	1,557	200	
1924	1,862	263	
1925	1,860	214	
1926	1,867	251	

Dr. E. J. Wright, Medical Officer-in-charge of Maternity Ward, furnishes a detailed report, which appears as Appendix II, page 47.

Out-patients at the Connaught Hospital during the last ten years have been as follows :—

——	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.
New cases	8,456	8,332	Records destroyed in hospital fire. 3rd February, 1920.	8,152	5,654	10,573	11,335	10,955
Subsequent attendances	21,139	13,836	do.	13,270	16,209	10,443	36,985	38,475
Total	29,595	22,168	...	21,422	21,863	21,016	48,320	49,430

——	1925.	1926.
New eases	14,106	13,834
Snbsequent attendanees ...	22,335	32,176
Total	36,441	46,010

The cost per head of patients in the Connaught Hospital for 1926 was £0 1*s.* 4½*d.* per diem as compared with £0 1*s.* 9*d.* per head in 1925. *Vide* Analysis of Hospital Expenditure for 1926 page 4.

European Hospital.

The European Hospital remained in the same building at Hill Station as mentioned in the report for 1925. Excellent quarters adjoining the European Hospital, providing accommodation for two Nursing Sisters, were erected during the year.

The total number of patients was 125 with three deaths, all among non-officials.

No operations were performed during the year. The number and status of those who received treatment were as follows :—

———	Admissions.	Deaths.
Government officials	39	...
Shipping	50	3
Naval	2	...
Mercantile	19	...
Ladies	6	...
Military	2	...
Miscellaneous	7	...
Total	125	3

Kissy Institutions.

The total number of cases treated at Kissy and Wellington dispensaries was 3,297.

———	Remaining in Hospital at the end of 1925.	Admissions 1926.	Total Cases Treated.	Total Deaths.
Lunatic Asylum	86	62	148	8
Infirmaries	55	211	266	46

Hospitals and Dispensaries in the Colony and Protectorate.

A new hospital of seventeen beds and an operating theatre was built at Bonthe, Sherbro, and the first of a series of Protectorate type hospitals was commenced at Bo.

A new dispensary under the supervision of the Medical Offieer, Pujehun, was opened at Mano Salija on the Liberian border.

It was unfortunately necessary, on account of shortage of qualified staff, to close down Sumbuya as a medical officer's station, but it is anticipated that it will be possible to reopen it early in 1927.

Hospital and Dispensary Statistics.

Table showing the total number of new cases treated at all hospitals and dispensaries during the past ten years :—

Years.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Patients ...	57,765	55,562	44,698	51,287	48,270	51,689	50,260	53,270	64,752	67,975

Quinine Prophylaxis at all Hospitals and Dispensaries.

During the year quinine was issued gratuitously to the public to the extent of 452,916 grains for the prophylaxis of malaria.

This shows an increase of 108,316 grains as compared with 1925, when 354,600 grains were given.

IV—Scientific.

Reports appear as appendices.

W. D. INNESS,
Director of Medical and Sanitary Services.

V—Hygiene and Sanitation.

A.—GENERAL REVIEW OF WORK DONE AND PROGRESS MADE.

1—Preventive Measures.

(*a*) *Insect-borne Diseases.*

A. costalis is perhaps the only malaria carrying mosquito found here ; there are numerous breeding places of this species, especially in the west side of the town. In 1925—*vide* annual report—an intensive survey of the breeding places was made ; these were marked on a spot map, and are familiar to the inspectors, who see that they are treated weekly. During the dry season, December to March, the costalis incidence in Freetown is small ; as the low-lying land has dried up the streams which are our greatest trouble are canalized, the rock pools have all evaporated, making anti-malarial work easy and efficient, and with the exception of certain areas in the west end it is difficult to find *A. costalis*. After one or two tornadoes the picture changes, the torrents from the surrounding mountains wash away all canalization, the streams are let loose in all directions, forming pools and back-washes which vary with every tornado; if it is realized that Freetown is on a flat and in many places low-lying piece of land at the foot of a high range of mountains, and that in one day in 1925 the rainfall registered in about six hours was 11·8 inches, a mental picture of the difficulties of dealing with breeding places in the rains can be formed. The Steegmann anti-malarial measures, begun as a war measure in 1918, are being gradually, as funds allow, extended: so that in course of time the whole town will be properly drained and all low-lying land raised sufficiently high to prevent flooding, when there will be left only the brooks to be dealt with in a permanent manner. Yearly, as soon as the flow in the streams is sufficiently low, canalization of a temporary though efficient nature takes place; this is usually commenced in December, takes a month to do and costs about £120 ; it lasts till the first heavy tornado, say about April, when everything is washed away. To permanently canalize and control the stream beds with concrete would be beyond the finances of the Colony at present, but it is a state that must come eventually in the interests of the health of the community, and it is to be hoped that soon the finances of the Colony will allow a start to be made.

Yellow Fever.—None.

Relapsing Fever.—None.

Trypanosomiasis.—During the year four cases were reported.

One girl of eighteen, a resident of Freetown, had, four years ago, visited Port Loko for four months, and it is probable her infection was got in Port Loko. She was an advanced case when seen and after a short treatment in hospital was removed by her people and died two days afterwards. Diagnosed by the microscope.

A second case was reported by a private practitioner and only the following information was sent :—

> "M. J., male four and a-half years, was brought by his mother to consult me on 30th March, 1926. He suffered from œdema for a week before I was consulted. Up to one year ago he lived with his mother, a trader in Bathurst, Gambia. They resided in the town and at no time did they go up river or into the interior."

As death was certified as being due to trypanosomiasis we must look on this as such.

The third case was observed in a soldier of the West African Regiment, who was subsequently removed to our hospital ; he had all the clinical evidence of the disease, but neither in our hospital in Freetown nor when after running away from hospital (he was arrested in his country and taken to Makeni hospital) were any trypanosomes found. Treatment did not improve his condition and he died. A fourth case was treated as an out-patient in an out-station. No history is available.

The elimination of fly from the Cape Peninsula was continued during the year. Two bullocks, old pensioners from the Sanitary Department, were put out there ; they live and thrive on the efwatakala grass and there is no evidence of their being infected by fly.

Filariasis.—With the exception of cases of elephantiasis coming for treatment, very little is seen of this disease.

The following extracts from the Medical Officer of Health's report gives the preventive measures taken against insect-borne diseases in Freetown :—

(*a*) *House to House Inspection.*—100,579 compounds were inspected during the year and 496 mosquito breeding places were discovered. The occupiers of the premises on which the breeding places were found were prosecuted with the following result :—447 were fined, 46 dismissed or withdrawn, 3 cautioned and discharged. The fines from these prosecutions amounted to £109 11*s.* 6*d.*

4,174 notices were served for the cleaning of compounds ; of this number 95 were summoned, 42 were fined, 18 dismissed or withdrawn and 35 cautioned and discharged. The fines totalled £10 4*s.* 6*d.*

1,763 notices were served for the cleaning and repairing of cesspits ; 63 of this number were summoned, 24 were fined, 13 dismissed or withdrawn and 26 cautioned and discharged. The fines totalled £14 5*s.* 0*d.*

(*b*) *Oiling of Pools and Gutters.*—14,886 pools and gutters were oiled by inspectors and oiling gangs. The oiling gangs operated for five months only. Mosquito breeding places were discovered and dealt with in the usual manner.

(*c*) *Inspection of Trees.*—From May to September a systematic inspection of trees was carried out. 29,753 trees were inspected and 14,377 holes (in which mosquito larvæ were breeding or likely to breed) were discovered. Mosquito larvæ were found in seventy-four of these holes. All holes were either filled with cement, chipped so that water could not settle in them, or the trees were cut down.

(*d*) *Mosquito Larvæ Index.*—The mosquito larvæ index which was taken at the end of each quarter gave the following figures :—

First quarter	... ...	·57 per cent.
Second ,,	... ...	1·3 ,,
Third ,,	... ...	2·28 ,,
Fourth ,,	... ...	2·28 ,,

350 compounds were examined at each index.

(*e*) *Cesspools.*—During the dry season the usual disinfection of cesspools was carried out and during the rains oiling was done.

(*f*) *Canalization of Streams.*—During the month of December Alligator, Sanders, Nicols and Moore's brooks were regulated and canalized and all mosquito breeding places filled up. But owing to the lateness of the rains this was not completed by the end of the year.

(*g*) *Inspection of Boats and Canoes.*—4,182 boats and canoes were inspected for stagnant water and 1,144 were oiled. Mosquito larvæ were found in seven.

(*b*) *Epidemic Diseases.*

Plague.—Although this disease is regularly notified from neighbouring colonies, places within incubation period distance from us, a case of plague has never been known in Sierra Leone.

All through the year an intensive rat destruction campaign was carried out : early in the year paid rat-catching gangs were employed, but it was found that the rats were not being brought in in sufficient numbers to justify the continuance of these gangs, and the following method was adopted :—a Rat Destruction Week was advertized : with the necessary propaganda the public were informed that rat-traps would be issued on loan free and twopence would be paid for every rat brought in (an offer of penny per rat did not stimulate the people to bring in rats) with the result that rat destruction went up from sixty to eighty per day to 250–400. As soon as the rats are brought in the tails are cut off and rats and tails incinerated. No rat without tail is paid for. Owing to shortage of staff only a small daily percentage of rats is examined : it is hoped in the near future that a bacteriologist will be appointed, when a sufficient percentage of all rats will be examined. So far a plague infected rat has not been found.

During the year 30,034 rats were destroyed.

All passengers and luggage from infected ports, unless accompanied by a certificate of previous disinfection and deinsectization, are disinfected and deinsected at the wharf disinfecting station.

Cholera and enteric have not been found during the year.

Smallpox.—There was no case of smallpox reported during the year in the Colony or Protectorate. There were a few isolated cases of chicken-pox.

There were 13,669 vaccinations performed during the year; of these 7,491 were successful and 2,305 were not seen again. This gives a percentage of success in all vaccinations of 54 per cent., or 65 per cent. in vaccinations seen a second time. Supposing 54 per cent. of the vaccinations not seen again were successful, it gives a total successful percentage of 64 per cent., which is gratifying, considering the effects of the climate on the lymph.

Attached is a table showing the vaccinations done in the different areas during the year:—

Place.	Total Number Vaccinated.	Successful.	Unsuccessful.	Not Seen.
Freetown	5,560	2,669	2,153	738
Kent	116	77	31	8
Regent	252	169	69	14
York	122	53	41	28
Waterloo	252	231	13	8
Daru	232	109	112	11
Batkanu	162	116	37	9
Kenema	202	152	41	9
Njala	441	272	82	87
Panguma	150	117	25	8
Pendembu and Segbwema	919	572	227	120
Sembehun	542	434	65	43
Sumbuya	379	344	31	4
Bo	241	163	62	16
Bonthe	418	210	112	96
Makeni	1,719	931	448	300
Moyamba	236	121	59	56
Port Loko	412	274	45	93
Pujehun	522	210	113	199
Kabala	389	47	13	329
Kaiyima	323	157	37	129
Mano Salija	80	63	17	...
Total	13,669	7,491	3,873	2,305
Colony	6,302	3,199	2,307	796
Protectorate	7,367	4,292	1,566	1,509

Dysentery.—From all stations 193 cases were notified, of these 58 were amœbic and 2 bacillary, leaving 133 of a type not determined, of the true dysenteries. 28 amœbic and 1 bacillary were treated in Freetown.

The undetermined types were made up of out-patients who complained of diarrhœa with blood, were given medicine and never seen again.

It is the opinion of the medical officers concerned that this disease is diminishing year by year, and this is no doubt due to our excellent water supply here and our improved sanitation. The absence of flies in Freetown as compared with other tropical climates has no doubt a marked effect on the incidence of dysentery.

Tuberculosis.—There were 27 deaths certified as from tuberculosis during the year; of these 19 were in the Connaught Hospital.

All cases seen by Government medical officers and some by private practitioners are notified to the Sanitary Department, who visit the houses, disinfect the premises and give advice as to ventilation, promiscuous spitting, etc., and means for preventing the spread to other residents in the house. The housing congestion in Freetown, together with the custom of keeping closed and blocking up all available windows and vents does not tend to stop the spread of this disease.

Helminthic Disease.—The campaign referred to in the 1924 and 1925 reports has been maintained and extended to other places in the Protectorate. No other special measures are taken, except free treatment when cases arise.

(c) *Port Health Work and Administration.*

During the year 375 vessels arrived in Freetown harbour from the North, 363 from the South. In addition to these 158 sailing vessels and motor launches arrived from Sherbro and other places in the Colony.

All vessels from the South were boarded and examined by the Medical Officer of Health, since Lagos was an infected port throughout the year.

For a period of about eight months, all vessels from the North were also boarded and examined, owing to plague and yellow fever being prevalent in Senegal, and plague at Teneriffe and Grand Canary.

Most ships calling at Freetown outward bound take deck labourers to work the cargo on the coast and these labourers are disembarked at Freetown on the homeward trip. Each ship takes from fifty to eighty boys and special attention is paid to the examination of these boys when they arrive back in Freetown. From 18,000 to 20,000 are examined per annum.

No cases of infectious diseases were found on any of these vessels and the majority were found to be in good sanitary condition.

On the 27th August, the s.s. "Zaria" arrived at about 7.00 o'clock in the evening and was boarded. All deck labourers and all firemen and passengers landing were examined. Everyone was found to be healthy and the usual medical certificate was obtained from the Ship's Surgeon as to the health of the ship's company and passengers.

Some weeks afterwards a paragraph appeared in Reuter's to the effect that two native firemen had died on board the "Zaria," the cause of death being given as bubonic plague. These deaths had apparently taken place a few days after the ship had left Freetown.

No case of plague developed amongst either deck labourers, firemen, or passengers who landed from the "Zaria."

On the 14th of December, a cable was received from Accra to the effect that a European had died on the "Elmina" at sea on the 12th, a post-mortem examination was performed at Accra and a diagnosis of suspicious plague was made.

The "Elmina" arrived at Freetown on the 18th December and was worked under strict quarantine conditions.

All deck labourers and passengers landing at Freetown were taken to the wharf disinfecting station, given baths and their clothing and baggage put through the Washington Lyons Steam Disinfector.

A few days afterwards another cable arrived from Accra to say that the cause of death was malaria.

Recently, some Syrian firms have commenced to import second-hand clothing from Marseilles and Dakar for sale in Freetown. Immediately on arrival of these bales of clothing the Medical Officer of Health is informed by the Customs authorities and the clothing is put through the steam disinfector before being handed over to the owners.

At the beginning of August, a motor-launch was provided for the Medical Officer of Health for the purpose of boarding ships. This launch has proved of great benefit and saves a great deal of time, for quite often as many as six ships may arrive in one day.

2—General Measures of Sanitation.

(a) *Sewage Disposal.*

This remains the same as previously, viz. trenching and sea dumping: the latter is not entirely satisfactory and gives cause for complaint in certain areas. It is anticipated that as soon as our refuse disposal is working satisfactorily an effort will be made to dump sewage far out to sea.

Scavenging.—There are numerous dust-bins scattered over the town within easy access of all inhabitants. Household refuse is deposited in these by householders. Street drains and open spaces are kept clean by scavenging gangs. All dust-bins are emptied twice daily, or oftener if required, by motor-lorries, brought to the various small incinerators and picked. All non-inflammable material is buried or dumped in the sea, the remainder incinerated.

Refuse Disposal.—Owing to the delay in supplying the tug and barges, the disposal of refuse by sea dumping foreshadowed in the 1925 report could not be given effect to. During the year the mule and bullock rubbish carts were replaced by motor-lorries, with the effect that a larger amount of refuse is handled in a shorter time and the unsightly dumps at dust-bins and incinerators have been removed. The old open type of dust-bin has in most cases been replaced by new closed types: this also adds considerably to the sanitary condition of the town. The new slip-way, wharf, road and incinerator are ready and sea dumping will begin as soon as the tug and barges arrive.

Drainage.—The following drainage work was carried out by the Public Health Engineer :—

(1) New Concrete Drains.

"Drain in Fura Bay Road
Drain in Dundas Street
Drain in Bathurst Street
Drain in Kennedy Street
Outfall drain—Krutown Road, Adelaide Street to Alligator Brook
Outfall drain—Priscilla Street."

(2) Improvements to Existing Drains.

"George Street (Central), Portuguese Town Spring, Krutown Road, Gloucester Street, Pademba Road, Circular Road, Kissy Street, Fergusson Street, Westmoreland Street, and Fura Bay Road."

Offensive Trades.—There are none in the town. Fish curing in smoke and sunlight is done outside the municipal area and causes no offence.

(b) Water Supplies.

The following report is submitted by the Superintendent of Freetown Water Supply :—

"All sections of the works were maintained in good condition during the year.

"*Public Stand-posts.*—Two new public stand-posts were erected bringing the number of stand-posts to 225.

"*Private Services.*—The number of private services laid was seventeen ; there are at present 437 private services with 856 taps, besides 77 Government services with about 360 taps.

"*Berry Street Supply.*—After protracted delay, the water supply to Berry Street (Central) and its vicinity was laid this year. The supply is obtained from the War Department mains at Tower Hill by agreement with the Military authorities, under the terms of which the Water Authority pays to the War Department an annual fee of five pounds for permission to lay a 3-in. main and erect three fire hydrants and two public stand-posts, to be supplied from the War Department mains.

"The necessity for this arrangement lies in the fact that this locality is situated at too high an altitude to be supplied from our service reservoir at Tower Hill.

"This supply is metered and the average consumption for the past four months, i.e. since its installation, is 650 gallons per diem.

"The Education Department, on behalf of the Government Model School, has applied through the Public Works Department for permission to be connected to this main, as the pressure in the existing supply from our mains is unsatisfactory. Negotiations are being carried on with the Military authorities on this matter.

"*Consumption.*—The total consumption of water for all purposes during the year was 164,000,000 gallons. Of this, 4,269,000 gallons were supplied to shipping ; 7,395,000 gallons for trade and other non-domestic purposes ; the balance of 152,336,000 gallons represented the pure domestic consumption.

"The maximum daily consumption recorded was 604,200 gallons on the 3rd March, and the minimum 302,300 gallons on the 15th June.

"There was no actual shortage of water this year, but the City was put on a restricted supply for several hours a day from the 6th to the 17th May.

"*Pumping Operations.*—Pumping operations were carried on for thirty-three days this year, between the 29th March and 22nd May."

(c) Hill Station Sanitation.

This is a European residential area at the terminus of the Freetown railway, 800 feet above sea level and five and a-half miles from Freetown, to which it is connected by an excellent motor road. Apart from the houses for civil officials, there are two military houses, two for heads of commercial undertakings and one belonging to a Mission.

The Water Supply is excellent and is derived from a well protected catchment area in the hills. At the very end of the dry season the supply is intermittent but sufficient ; during the rest of the year the amount is unlimited.

Conservancy. The old trenching ground had been in use for twenty years and was worked out. As the site was the most convenient and central to be found, it was retained and an "Otway" pit constructed with considerable difficulty on account of the rocky nature of the soil. The pit measures 20 feet by 18 feet, by 15 feet in depth. From the first the system was a success and there was never a free fly to be seen in the vicinity. During the first three months of the year dry earth was in use in the buckets and during that time the fly trap was filled weekly and had to be changed and cleaned. From April it was possible to use saw-dust almost exclusively, and immediately the number of flies caught in the trap began to diminish and within a week or so was reduced to none, and from that time not one fly was caught in the trap or was seen to escape from the charging hole. Presumably, this pleasant state was in the main the result of the very high temperature generated by the fermentation of the mixture, and partly owing to the action of the turpentines, etc., from the pine dust. In addition to the absence of flies, the usual fæcal smell of a night-soil pit disappeared and was replaced by a faintly aromatic and almost pleasant odour. Mosquitoes are almost entirely absent throughout the dry season and even during the rains they are by no means numerous, except on for a few days following the rare occasion of a storm from the South-West when numbers are blown up from the uncleared valley.

(*d*) *School Hygiene.*

There is undoubtedly an increasing interest being taken in hygiene in most if not all of the schools during the past two years ; this is probably due to the inauguration of the school medical inspection and to the annual health week with its consequent propaganda.

During health week, hygiene essays on set subjects were sent in by many of the schools in Freetown and Protectorate : these essays were examined by the School Medical Officer and prizes were given by the Sanitary Department for the best essays. The standard of these essays was much higher in 1926 than last year and they have been one of the means of stimulating the pupils to a better knowledge of hygiene.

The school primer "An Elementary Course in Tropical Hygiene," written by Dr. M. Blacklock the School Medical Officer, is now being used with success in all Government schools and many Missionary schools : it is in simple language easily understood by all classes of pupils, and they are beginning to associate its teaching with their home life.

The following is a report by the School Medical Officer on the year's work :—

"During the year 1,867 school children were medically examined. Of these 570 were examined in the period 1st January to 28th February and were therefore included in the survey given in the 1925 Annual Medical and Sanitary Report."

Of the remaining 1,297 children 1,040 were in Freetown schools, 163 were in Moyamba, 94 in Njala.

The distribution was as shown in the following table :—

School.	Boys.	Girls.
Freetown.		
Ebenezer	88	55
Christ Church	52	57
Cline Town	37	33
Zion Wesleyan	92	50
Tabernacle	39	39
Madrasa Islamia	92	15
,, Amaria	64	34
,, Sulaimania	50	37
,, Harunia	27	14
Government Wilberforce	54	44
Krutown Road	25	5
Brookfields	20	19
Protectorate.		
U. B. C. Moyamba Girls	—	90
Njala College	94	—
R. C. Girls Moyamba	—	35
R. C. Boys ,, ...	38	—
	772	527 = 1,299

Dr. Blacklock was on leave from 11th July until 7th November, during which time Dr. Lowe—Medical Officer, Princess Christian Mission Hospital, acted.

As last year, letters were sent to the parents of the children in Freetown schools, who were found to have defects requiring treatment, stating the nature of the defects and recommending them to have medical treatment.

In the Protectorate, as the schools examined were chiefly boarding schools, a different method was adopted. At Njala, after the inspection, a meeting was held of the Chief Inspector of Schools, Central Province, the headmaster of the College, together with the School Medical Officer and the Dispenser. A report was given of each boy's medical condition and the appropriate treatment recommended.

In Moyamba, where the schools were fortunate in having trained nurses on the staff, similar meetings were held subsequent to the inspection, treatment recommended, and advice as to sanitation and diet, exercise, etc., given.

The school inspection has suffered from the part-time nature of the work; sometimes only one session a week could be given to schoolwork owing to duties at hospital and at the Infant Welfare Clinics. The combination of hospital practice with school-inspection has, however, had certain advantages. It has been possible to obtain a better idea of the morbidity caused by certain infections. Again the prevalence of such diseases as whooping-cough, the amount of pneumonia and the frequency of acute attacks of malaria can only be discovered by clinical observation or hospital out-patient practice.

The nature and prevalence of the different diseases affecting the school children appears much the same as last year. Malaria, intestinal parasites, injuries to feet giving rise to ulcers and enlarged glands are common. There is a slight increase in the number showing rickety bony deformities, due possibly to the fact that many of the schools examined this year were attended by the poorer children of the town.

School Sanitation.—Sufficient time has not elapsed since the initiation of school medical inspection to be able to report much change in the sanitation of schools. The sanitary condition, however, of each school inspected has been reported upon. A committee has now been formed, composed of the Deputy Director of Sanitary Service, the School Medical Officer and the Chief Inspector of Schools. This committee is preparing a syllabus dealing with school sanitation, the diet and exercise of the children, and making arrangements for the instruction of the school teachers in these matters and for more efficient and practical teaching of hygiene.

From the hygienist's point of view the type of Protectorate residential school at Njala seemed excellent, and an account of it is accordingly given here, in anticipation of the building of more Protectorate schools.

Njala School.—This school is situated in a large well laid out compound, intersected by two straight avenues shaded by trees.

All the buildings are of mud with thatch roofs, the wooden doors and furniture being made by the boys themselves. The common rooms, classrooms, kitchen, room for manual training and teachers offices are situated centrally at the intersection of the avenues, each surrounded by a small garden which is tended by the boys themselves.

The houses accommodate from four to seven boys, depending on the age of boys, and each house has a head boy responsible for its cleanliness and order.

The latrines are of the bucket system and are situated at a convenient distance from the back of the houses—one for every two houses.

At the time of the examination the compound, houses and latrines were in excellent sanitary condition.

Being a boarding school supervision of the diet is easy. The cooking is done in the central kitchen to which the boys bring their own dishes at meal time. Vegetables are amply supplied, and these are grown by the boys themselves as part of their school education.

The boys go daily to the adjacent river to bathe and, in addition, are supplied with soap, and provision is made for supplementary washing in the houses.

Scabies and jiggers were rare among the boys and, I understand, are punishable offences, as the nature, means of prevention, and treatment of these diseases have been explained to them.

The school is fortunate in having ample room for playing-fields and the pupils have regular exercise in co-operative games—cricket being specially favoured.

The curriculum of the school is varied—combining literary training with manual work and outdoor agricultural instruction and practice.

Hygiene is taught in a practical manner, the reasons for cleanliness and order in the house, latrines and compounds being pointed out.

Mr. Hargreaves, the Government Entomologist, has kindly presented the school with a box containing specimens of all the harmful flies found locally, and specimens of the human schistosome-carrying snail have also been sent to the school.

As was to be expected from their healthy environment the standard of health was high.

This type of Protectorate school has many advantages. The boys are living in houses similar to those from which they have come and to which most of them will return and are shown not only how to construct such a house but also how to keep it and how to live in it in such a way as to safeguard health.

The agricultural field instruction not only gives healthy open air exercise but supplies the boys with ample vegetable in their diet and trains them to the realization of the necessity for vegetable cultivation in their own village homes.

The varied curriculum is, apart from its educational advantages, itself conducive to health.

The well laid out compound acts as a model in Protectorate school planning on sanitary principles and the school life, adopting as it does the best of the home conditions, does not dissociate the pupil too completely from his native life ; an important consideration, both from the physical and mental health points of view.

(*e*) *Labour Conditions.*

As there are no mines nor plantations in the Colony, there cannot be said to be any recruitment of labour.

Many Government departments and mercantile firms employ labour ; but in all cases it is daily wage labour and the labourers are under no bond : this class of labour provides its own housing arrangements ; they receive free medical attention at the various institutions. As Sierra Leone is entirely an agricultural colony, there cannot be said to be any industrial conditions that would hamper growth or delay development.

(*f*) *Housing.*

Freetown is perhaps the best laid out town in our West African colonies, but unfortunately, owing to (*a*) the lack of building land within the municipal boundary (*b*) slackness in the old days of making and enforcing proper building regulations, the town which was originally laid out one plot one house has become one plot two or three houses with consequent great house congestion. An effort is being made to gradually get rid of this congestion : (*a*) by the passing of the Freetown Improvement (Amendment) Ordinance, (*b*) as soon as the survey of Freetown is complete, the formation of a housing committee, (*c*) the opening up of urban areas outside the municipality. All these measures must in equity work slowly, and it will be many years before the housing congestion in Freetown is remedied.

In the Protectorate the state of affiairs is much better, as most of the mud houses have to be rebuilt every few years. With the co-operation of the political officers, villages are being built in a sanitary manner with proper alignment and spacing.

In the near future a committee is being formed to go into the question of better housing arrangements for European officials.

(*g*) *Food in Relation to Health and Disease.*

Meat Inspection.—2,869 bullocks, 247 sheep, 3 goats and 1 swine were slaughtered during the year.

786 bullocks, 115 sheep and 1 goat were slaughtered in the Imperial slaughter-house for the Imperial Government and the remaining 2,083 bullocks, 132 sheep, 2 goats and 1 swine were slaughtered in the public slaughterhouse for public sale. 11 quarters of beef were condemned by this department and destroyed by order of the Police Magistrate for cysticercus bovis. A quantity of fish was also seized and destroyed in the same way, being in a state of advanced decomposition.

Food Inspection.—The following food-stuffs were condemned by this department :—

1 package fish
1 case biscuits
3 double cases pomegranates
1 single case pomegranates
1 barrel pigs' feet.

The prevalence of beri-beri in the Freetown prison up to 1922 called forth a committee of enquiry into the relation of food and exercise in the prison to this disease, some interesting and instructive conclusions were arrived at, *vide* Annual Report, 1922, Appendix VI, Annual Report, 1923, Appendices V and XII. Since the adoption of the recommendation of these reports the prison has been free from beri-beri. The only cases of beri-beri seen during the year were in two Kru boys : one landed from each of two ships in the harbour.

The staple food in Sierra Leone is rice. The principal method of preparing and cleaning this is by forcible pounding in a mortar ; this undoubtedly damages the pericarp, and it is conceivable that if proper mechanical methods were introduced whereby the pericarp and germ were conserved, its food value would be greatly increased. The native diet here undoubtedly contains too great a proportion of carbohydrates and too little protein. Our sheet anchor here for Vitamin A. for expectant mothers and young children is cod liver oil, consequently the increased cultivation of such Vitamin A. products as ground-nuts, bananas, mangoes, tomatoes, millet, sweet potatoes, etc., should be encouraged.

Another, and what in the writer's opinion may turn out a very important deficiency disease met with in Freetown is congenital rickets. This disease is being investigated by Dr. E. J. Wright and his preliminary report will be found in Appendix 6.

There is a good deal of controversy about this disease here ; and one is asked "If congenital rickets is so prevalent here, with every factor, except sunlight, against cure, why does one not see the gross rachitic deformities, common in other countries" ? Although there are few exaggerated rickety deformities seen, it is impossible to take say forty adults in any part of the town without finding some evidence of rickets : such as scimitar shins, bossed forehead, knocked knees, or bowed legs. It is possible that congenital rickets may be one of the main causes of our high infant mortality rate, and one waits with interest the final findings of Dr. Wright.

Market and Slaughterhouses.—With their various foodstuffs, whether indigenous or imported, are daily inspected. There are no dairies.

B—MEASURES TAKEN TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

Sanitation.—Hygiene is on the curriculum of every school in the Colony, but it is scarcely sufficiently practical nor is sufficient time or attention given to it to be of much use to the scholars. This matter is receiving the attention of the authorities, and it is hoped and understood that in 1927 the teaching of hygiene in the schools will receive a "fillip."

C—TRAINING OF SANITARY PERSONNEL.

The African personnel consists of learners, fifth, fourth, third, second and first grade inspectors. So far, we have been unable to get material with sufficient education and ability to reach third grade, consequently there are no third, second, or first grade inspectors yet.

Learners are chosen as vacancies occur, and are under training for one year. This instruction consists of lectures in elementary sanitation and hygiene and practical demonstrations, and is carried out principally by the Superintendent Sanitary Inspectors, and Medical Officer of Health who also instructs in the technique of vaccination. After a year's training, if the Medical Officer of Health considers the learner shows a sufficient standard of education, his conduct and work have been satisfactory, and he is qualified to vaccinate, he is allowed to sit for an examination in the following subjects : this examination is made as practical as possible :—

(*a*) Nuisances as defined in the Public Health Ordinances

(*b*) Refuse, its danger to health, its disposal and destruction

(*c*) Scavenging, cleaning of streets, premises and lands

(*d*) Water—its sources, pollution, wells ; mosquito-proofing of stored water

(*e*) Mosquitoes, their distinction in all stages ; how a danger to health, their breeding places and the recognition of their water stages

(*f*) Police Court in relation to the duties of sanitary inspectors' powers of arrest for offences against sanitation, the issuing of notices and summonses.

Having passed the above examination a learner becomes a fifth grade inspector and is on probation for two years before being recommended for confirmation and the pensionable staff.

During the two years of fifth grade he attends courses of lectures, and demonstrations in the following subjects treated in quite an elementary manner.

A. (*a*) The human body, its anatomy and physiology
(*b*) Germs, insects, animals and food in relation to disease in man
(*c*) Water and air in relation to disease : ventilation
(*d*) Dwellings : requirements of a good house
(*e*) Quarantine : yellow fever, plague, smallpox, sleeping sickness
(*f*) Disposal of the dead.

B. A good knowledge of the laws of Sierra Leone in connexion with sanitation.

C. A good practical knowledge of the following :—
(*a*) Scavenging ; cleaning of streets, houses, compounds, lands, canoes and other small vessels, cemeteries : rubbish destruction
(*b*) Night-soil : removal and treatment
(*c*) Sanitary inspections, especially in connexion with water. houses, compounds, mosquito breeding, streets, lands, latrines, foreshore, dumping grounds, trenching grounds
(*d*) Sanitary inspections in connexion with trades, bakeries, fish curing, public markets, sale and storage of fresh provisions, keeping of animals
(*e*) Rat destruction, rat runs and the closing of such with cement or otherwise
(*f*) Sanitary appliances : keeping in good order and repair, tools, latrine receptacles, sanitary carts (oiling, greasing, etc.), fumigating apparatus
(*g*) Stables : animals, feeding and resting, keeping animals in good condition
(*h*) Disinfection and fumigation
(*i*) Details of quarantine in relation to segregation and isolation
(*j*) Clerical duties in a sanitary office : keeping, issuing and checking stores.

D. Village sanitation : its practical limits ; what to do on the outbreak of an epidemic : buildings and roads.

E. Reading maps of Sierra Leone and plans of towns : the points of the compass.

Having passed an examination on these subjects he becomes a fourth grade inspector. Promotion to third grade is by selection from fourth grade without examination.

Before an inspector can be promoted to second grade he must pass a final examination in hygiene in the following :—

A. All the above subjects treated more fully.

B. (*a*) The building regulations of Sierra Leone : the duties of a building inspector, practical as well as theoretical : scales : measurement of area, capacity, etc., so far as these fall within the duties of a sanitary or building inspector : reading of plans : making rough sketch plans of buildings and lands and of sites for buildings, etc.
(*b*) Diseases of animals treated in quite an elementary way : animal and meat inspection : prevention of spread of infectious disease amongst animals
(*c*) Inspection of food : food unfit for human consumption
(*d*) Vital statistics treated in an elementary way : Ordinances affecting these : methods and values of records from a sanitary point of view
(*e*) Sanitation in regard to prisons and schools
(*f*) An elementary knowledge of the following diseases, especially as to how they arise and are conveyed, and a good knowledge of the sanitary measures to be taken against them :—
Tuberculosis
Smallpox and chicken-pox.
Leprosy
Plague
Yellow fever
Malaria
Sleeping sickness
Typhoid fever
Guinea worm
Intestinal worms
Dysentery
Tetanus.
(*g*) Vaccination—practical and theoretical.
(*h*) Making rough plans of villages and towns.

An inspector may enter for the final examination at any time after an interval of one year from passing the intermediate but not before.

Promotion to first grade inspector shall be by selection from among the second grade inspectors.

In every case of promotion above the fifth grade such shall be on probation for one year, and if at the end of such period he is found to be unsuitable for the grade to which he has been promoted on probation, he shall revert to his previous rank : but such reversion shall not prevent his being again promoted on probation, if it would appear that he had become in the meantime more suitable for such promotion.

During all this time more advanced teaching is going on *pari passu* with the officers' routine work.

Above is our syllabus and what we aim at.

Teaching.—As the work of a sanitary inspector is unpopular, arduous and unpleasant, the best material does not apply to enter the service, preferring the less arduous, and shorter-timed office jobs.

The instruction given as far as it goes is excellent, but as the staff consists of one Medical Officer of Health, who is also Port Medical Officer, and two European Inspectors, one of whom is usually on leave and no first or second grade inspectors who could help, it must be realized that the teaching cannot be as regular and systematic as one would desire without seriously neglecting the sanitation of the town.

The facilities for teaching up to the present are not model ; but in the very near future when our new administrative block is finished, complete with lecture room, cinema, and magic lantern, the amenities for teaching will be ideal, and it is hoped that the services of a whole-timed teaching officer will be available who, by systematic regular and intensive training, will turn out sanitary inspectors capable of taking the certificate of the Royal Sanitary Institute.

D—RECOMMENDATIONS FOR FUTURE WORK.

(1) Improved teaching methods for our personnel by the appointment of a whole-time teaching officer.

(2) Continuance of the intensive anti-malaria work in Freetown. The anopheline breeding places are gradually being eliminated by the grading of existing drains, filling up low-lying swampy land, draining such areas and streets with permanent cement drains.

(3) When the finances of the Colony allow, an increase in staff is badly needed, viz., one senior sanitary officer, one superintendent sanitary inspector and four African inspectors. These are needed for the Protectorate, the sanitation of which with our present staff cannot receive the attention it should.

(4) Improvement of King Jimmy market and foreshore.

The year 1926 was a notable one for the department. The following works were finished :—

(1) New wharf disinfecting station

(2) Rebuilding with permanent houses of Cape Quarantine Station

(3) Provision of a motor launch for the Port Medical Officer,' who is also Medical Officer of Health

(4) Building of the new Infectious Diseases Hospital at Kissy

(5) Replacement of the mule and bullock refuse carts by motor-lorries ; part of our new sea dumping refuse scheme which would have been in working order in 1926 except for the delay in England in supplying the tug and barges

(6) Additional rain water tanks were provided in Bonthe.

VI—Meteorology.

The rainfall for the year at Tower Hill—129·33 inches,—was below the average. August was again the wettest month with a rainfall of 34·7 inches.

The greatest intensity recorded in any one day was 14·77 inches on 27th August. At Hill Station, the European residential area about 5 miles to the west of Freetown, the rainfall was 158·70, inches with the maximum intensity on August 27 of 10·56 inches.

H. O'HARA MAY,
Deputy Director of Sanitary Service.

Tables.

I—STAFF.

Medical Staff.

Office.	Name.	Absent on Leave. From			To			Remarks.
Director of Medical and Sanitary Service ...	W. J. D. Inness ...	—			—			
Deputy Director of Medical Service ...	J. B. Bate	17	3	26	10	9	26	
Senior Medical Officer	J. C. Murphy ...	17	2	26		—		Retired.
,, ,, ...	A. M. Dowdall ...	16	6	26		—		Retired.
,, ,, ...	J. Y. Wood	11	11	26	31	12	26	Promoted Senior Medical Officer.
Medical Officer ...	M. Jackson	1	1	26	15	1	26	
,, ...	J. D. Dimock ...		—			—		
,, ...	E. S. Walls	1	1	26	28	5	26	
,, ...	J. W. Hartley ...		—			—		
,, ...	W. A. A. Malone ...	8	12	26	29	12	26	
,, ...	C. B. Jennings ...	27	8	26	31	12	26	
,, ...	R. F. Campbell ...	4	8	26	31	12	26	
,, ...	A. W. Lewis ...	1	1	26	31	7	26	
,, ...	F. V. Hill		—			—		
Lady Medical Officer	Mrs. M. G. Blacklock	11	7	26	5	11	26	
African Medical Officer	E. J. Wright ...	7	1	26	16	7	26	
,, ...	M. C. F. Easmon ...		—			—		
,, ...	E. H. Cummings ...	1	1	26	13	3	26	
,, ...	G. N. Metzger ...	11	4	26	11	11	26	
,, ...	E. A. Renner ...	13	9	26	23	12	26	
,, ...	W. B. E. Hughes ...		—			—		
,, ...	J. A. Williams ...		—			—		
,, ...	W. F. O. Taylor ...		—			—		

Sanitary Staff.

Deputy Director of Sanitary Service ...	H. O'Hara May ...	20	1	26	5	12	26	
Senior Sanitary Officer	Major W. H. Peacock		—			—		
Medical Officer of Health	J. M. Mackay ...	1	1	26	31	7	26	
Superintendent Sanitary Inspector ...	D. S. Bowen ...	21	7	26	31	12	26	
,, ...	G. V. Herd ...	1	1	26	6	3	26	

Nursing Staff.

Senior Nursing Sister	Miss K. G. Appleton	1 24	1 11	26 26	3	7 —	26	Retired.
,, ,, ...	Miss C. Littlewood	4	8	26	31	12	26	
Nursing Sister ...	Miss A. E. MacMaster	16	6	26	8	10	26	
,, ...	Miss C. B. H. Goodwin		—			—		
,, ...	Miss M. A. Henry ...		—			—		
,, ...	Miss L. D. S. McPetrie		—			—		

African Medical Subordinate Staff.

Office.	Name.	Absent on Leave						Remarks.
		From			To			
Chief Dispenser ...	D. T. Betts ...	5	8	26	4	11	26	
Assistant Chief Dispenser	I. H. Wright ...		—			—		
First Class Dispenser	O. E. Nylander ...		—			—		
,, ,,	H. E. Frazer ...	26	5	26	25	7	26	
,, ,,	P. J. John	12	2	26	11	4	26	
,, ,,	M. O. Frazer ...		—			—		
,, ,,	M. P. Neville ...		—			—		
,, ,,	P. Q. A. John ...		—			—		
,, ,,	I. B. Doherty ...		—			—		
,, ,,	T. M. Scott	27	11	26	29	11	26	
,, ,,	J. C. May		—			—		
,, ,,	S. B. Williams ...		—			—		
Second Class Dispensers	Ten		—			—		
Third Class Dispensers	Twelve		—			—		
Laboratory Assistant ...	J. T. Roberts ...		—			—		
Male Nurses and Apprentices ...	Twenty-five		—			—		
Female Nurses and Probationers ...	Twenty-two		—			—		

African Sanitary Subordinate Staff.

Health Visitors ...	Miss E. Thomas and two others ...	—	—	
Public Vaccinator, Freetown ...	S. H. Browne ..	—	—	
Fourth Grade Sanitary Inspector ...	E. A. Nicholson ...	—	—	
Fourth Grade Sanitary Inspector ...	C. E. King ...	—	—	
Fifth Grade Sanitary Inspectors ...	Twenty-four	—	—	
Sanitary Learners ...	Six	—	—	

Clerical Staff.

First Grade Clerk ...	S. G. Randall ...	—	—	
Second Grade Clerk ...	M. St. George Auber	—	—	
Third Grade Clerk ...	Thirteen	—	—	

Store-Keeping Staff.

Chief Store-keeper ...	K. A. King ...	—	—	
Assistant Store-keeper	E. J. Beale ...	—	—	
,, ,,	D. G. Kawaley ...	—	—	

2—Rainfall, Tower Hill.

Year.	Inches.	Wettest Month.
1917	130·81	August
1918	103·43	July
1919	117·94	July
1920	106·85	July
1921	134·17	August
1922	155·90	September
1923	125·28	July
1924	149·67	August
1925	140·23	August
1926	129·33	August

It is of interest to note that the average rainfall taken in decades is getting less.

Period.	Inches.
1882–1891	166·07
1892–1901	165·60
1902–1911	162·41
1912–1921	152·47
1917–1926	129·16

Records of temperature, humidity and rainfall at the various stations are attached,

III—METEOROLOGICAL RETURNS.

Freetown (Tower Hill).

Latitude 8° 29′ 30″ N. Longitude 13° 13′ 55″ W.

Month.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	90	70	87	73	71·5	...
February	93	71	89	74	69·5	...
March	93	73	90	77	71	·12
April	93	71	90	71	73·5	5·03
May	95	70	91	75	73	7·02
June	92	70	87	74	82·5	21·55
July	87	70	84	73	86·5	21·58
August	86	69	84	73	86	34·07
September	89	69	85	72	84·5	25·35
October	91	69	87	72	80	8·25
November	90	69	86	74	82	5·94
December	90	70	88	74	76·5	·42
The Year ...	95	69	87	74	78	129·33

BATKANU.

Latitude 9° 4′ N. Longitude 12° 26′ W.

MONTH.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	94	59	88	68	58·5	...
February	104	65	100	68	59·5	...
March	106	67	102	71	54·5	...
April	107	68	101	72	60	·93
May	104	69	97	72	66	9·48
June	95	68	89	71	83·5	15·70
July	93	70	86	72	89	16·89
August	90	68	86	71	87·5	19·95
September	92	68	89	71	84·5	13·63
October	93	67	90	70	83	12·72
November	92	68	90	71	85	7·34
December	95	62	90	67	78·5	...
The Year ...	107	59	92	70	74	96·64

BONTHE (SHERBRO).

Latitude 7° 32′ N. Longitude 12° 30′ W.

January	92	60	90	68	76·5	...
February	95	61	92	68	74·5	...
March	98	69	94	72	73	1·80
April	96	70	92	73	76	6·02
May	93	72	90	74	78·5	6·59
June	90	68	89	71	80·5	30·44
July	89	69	86	71	81	30·71
August	89	65	85	70	83·5	56·26
September	89	70	85	72	81	16·16
October	90	70	87	73	77·5	13·96
November	90	70	89	73	78	4·96
December	90	70	90	74	78·5	·40
The Year ...	98	60	89	72	78	167·30

Bo.

Latitude 7° 56′ N. Longitude 11° 47′ W.

Month.	Absolute Shade, Maximum.	Absolute Shade, Minimum.	Average, Maximum.	Average, Minimum.	Relative Humidity.	Rainfall in Inches.
January	98	58	93	67	70	...
February	100	62	97	68	58·5	...
March	101	68	96	72	64·5	3·76
April	97	67	94	73	71·5	8·38
May	95	70	91	73	75·5	8·10
June	98	70	88	72	79·5	12·32
July	90	60	86	68	75·5	13·85
August	89	60	85	68	86	26·04
September	89	60	85	67	84	17·56
October	90	60	87	68	82·5	15·13
November	90	68	87	70	81·5	9·45
December	92	62	88	66	87	·18
The Year ...	101	58	90	69	.76	114·77

Kabala.

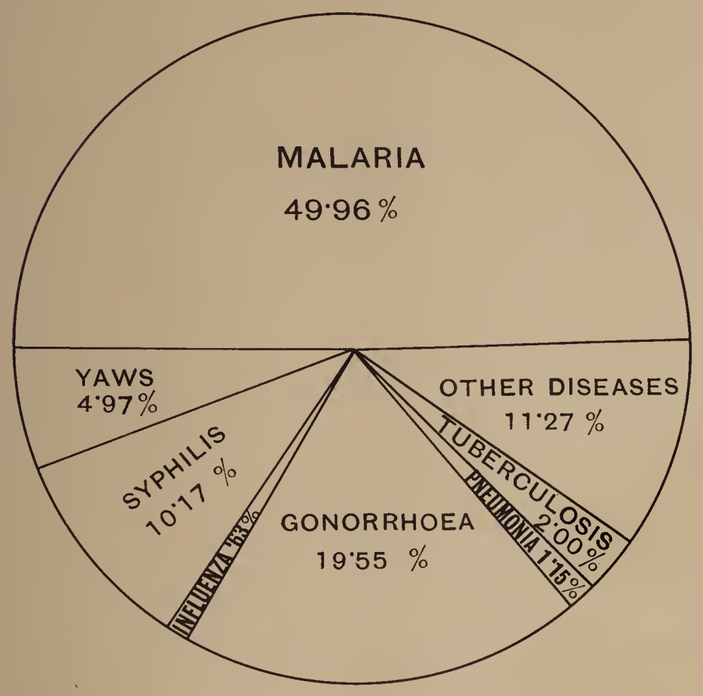
Latitude 9° 34′ N. Longitude 11° 31′ W.

January	97	51	91	61	51·5	·11
February	100	54	96	61	44	...
March	101	60	97	69	57	1·17
April	101	60	94	70	61·5	1·66
May	100	62	92	70	74·5	6·19
June	92	65	86	69	83	10·05
July	96	61	83	68	84·5	13·68
August	86	65	83	67	91	17·38
September	89	63	84	67	90·5	18·97
October	89	63	86	66	82	10·45
November	88	60	85	66	83	5·76
December	93	51	86	61	78·5	·40
The Year ...	101	51	89	66	73·0	85·82

DIAGRAMS SHOWING IN GRAPHIC FORM THE RELATIVE INCIDENCE OF INFECTIVE AND OTHER DISEASES

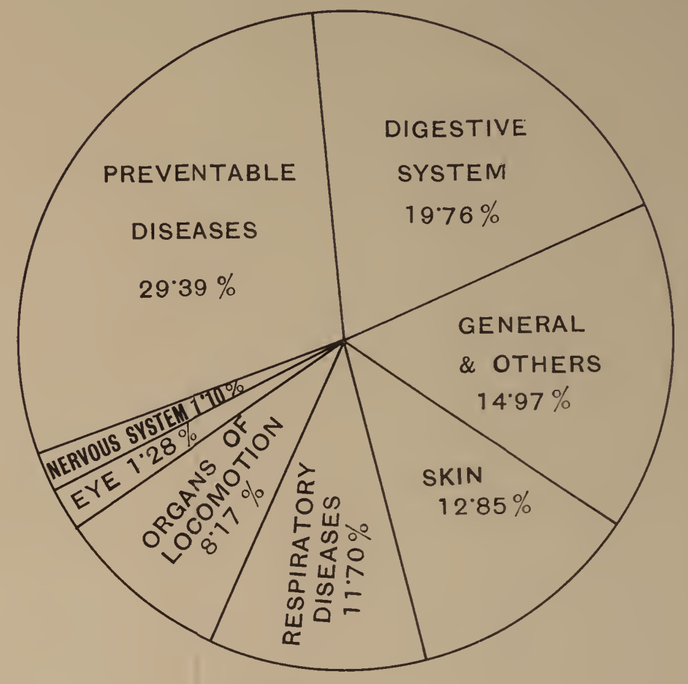
INFECTIVE DISEASES

TOTAL INCIDENCE - - 8,579

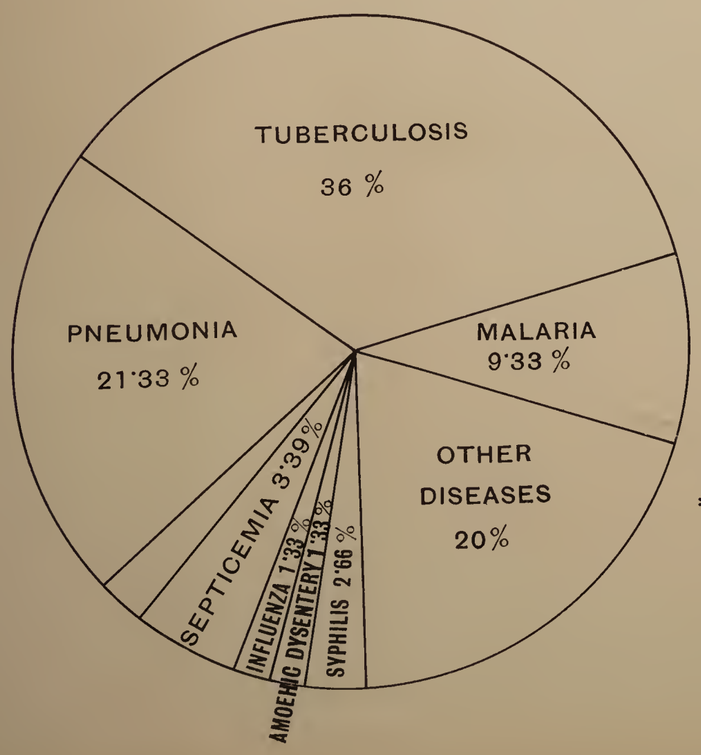


GENERAL SYSTEMIC AND PREVENTABLE* DISEASES

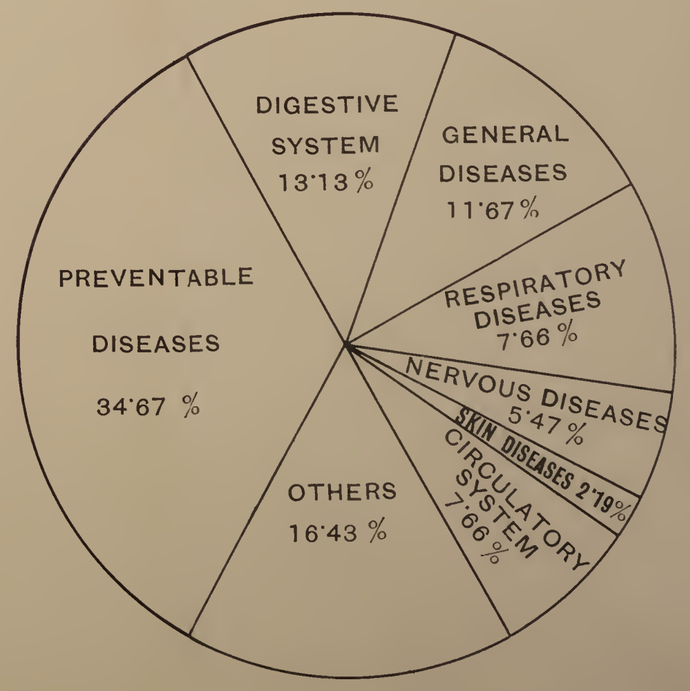
TOTAL INCIDENCE - - 67,978



TOTAL DEATHS - - - 75



TOTAL DEATHS - - - 274



* Under the head of "Preventable Diseases" are:

1. Infective Diseases
2. Intoxications
3. Scabies
4. Injuries
5. Poisons
6. Helminths
7. Insecta

IV—RETURN OF DISEASES AND DEATHS.—EUROPEAN.

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	§Remaining in Hospital at end of 1925.	Total		‡Total Cases treated.	‖Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
INFECTIVE DISEASES.							
Beri-beri	...	...	...	...	...	1	
Cerebro-spinal fever ...							
Chicken-pox ...							
Cholera							
Dengue							
Diphtheria							
Dysentery:—							
(*a*) Amœbic ...	...	1	...	1	...	3	
(*b*) Bacillary ...	...	1	...	1	...	1	
(*c*) Type not determined							
Endocarditis—infective							
Enteric							
Erysipelas							
Gonorrhœa	...	...	...	...	...	2	
Influenza	...	2	...	2	...	2	
Kala-azar							
Leprosy:—							
(*a*) Nodular ...							
(*b*) Anæsthetic ...							
Malaria:—							
(*a*) Tertian ...							
(*b*) Quartan ...							
(*c*) Aestivo-autumnal	...	51	...	51	1	9	
(*d*) Chronic ...	2	...	1	2	...	10	
(*e*) Type not determined ...	...	6	...	6	...	48	
Blackwater fever ...	...	3	...	3	...	...	1
Measles	...	1	...	1	...	...	
Papataci fever ...							
Plague							
Pneumonia							
Pyrexia of uncertain origin	...	1	...	1	...	4	
Rabies							
Relapsing fever ...							
Rheumatic fever ...							
Septicæmia ...							
Smallpox							
Syphilis :—							
(*a*) Primary ...	...	1	...	1	...	...	
(*b*) Secondary† ...							
(*c*) Inherited ...							
Tetanus							
Trypanosomiasis (sleeping sickness) ...							
Tuberculosis ...	...	...	...	...	...	1	
Carried forward ...	2	67	1	69	1	81	1

*In-patients are those treated in hospitals and institutions, and the term does not apply to those treated in their own quarters, even though they would ordinarily be in-patients if there were suitable accommodation.

†"Tertiary Syphilis" is a term sometimes applied to the later symptoms.

‡"Total cases treated" will, of course, include those remaining in hospital at the end of the previous year.

§i.e., the year previous to that for which the return is made.

‖The figures in this column to be carried on to the next month's return.

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
INFECTIVE DISEASES—*continued.*							
Brought forward ...	2	67	1	69	1	81	1
Undulant fever ...							
Whooping cough ...							
Yaws							
Yellow fever ...							
Other diseases ...							
INTOXICATIONS.							
Alcoholism	...	2	1	2	...	...	
Morphinism ...							
Other intoxications ...							
GENERAL DISEASES.							
Anæmia	...	6	...	6	...	4	
Anæmia—pernicious ...	...	...	...	...	...	1	
Diabetes							
Exophthalmic goitre ...							
Gout							
Leucocythæmia ...							
Lymphadenoma ...							
Myxœdema							
Purpura							
Rickets							
Scurvy							
Other diseases ...	...	2	...	2	...	17	
LOCAL DISEASES.							
Diseases of the Nervous System.							
Sub-section 1.							
Diseases of the Nerves:—							
Neuritis	...	1	...	1	...	1	
Meningitis ...							
Myelitis							
Hydrocephalus ...							
Encephalitis ...							
Abscess of brain ...							
Congestion of brain							
Other diseases ...							
Sub-section 2.							
Nervous Disorders of Undetermined Nature:—							
Apoplexy ...							
Paralysis	...	1	...	1	...	...	
Chorea							
Epilepsy							
Carried forward ...	2	79	2	81	1	104	1

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	2	79	2	81	1	104	1
Neuralgia ...	...	...	...	...	...	2	
Hysteria							
Other diseases ...	...	...	...	...	...	4	
Sub-section 3.—Mental Diseases :—							
Idiocy							
Mania							
Melancholia ...							
Dementia ...							
Delusional insanity ...	...	1	...	1	...	1	
Other diseases ...	1	5	...	6	...	...	
Diseases of the Eye.							
Conjunctivitis ...	...	...	...	...	...	1	
Keratitis							
Ulceration of cornea ...							
Iritis							
Optic neuritis ...							
Cataract							
Other diseases ...	...	1	...	1	...	1	
Diseases of the Ear.							
Inflammation ...	...	1	...	1	...	...	
Other diseases ...	...	...	...	...	...	4	
Diseases of the Nose.							
Inflammation ...	...	...	...	...	...	3	
Other diseases ...	...	...	...	...	...	3	
Diseases of the Circulatory System.							
Pericarditis							
Endocarditis ...							
Valvular Disease :—							
(*a*) Mitral ...							
(*b*) Aortic ...							
(*c*) Tricuspid ...							
(*d*) Pulmonary ...							
Arterio-sclerosis ...							
Aneurism							
Other diseases ...							
Carried forward ...	3	87	2	90	1	123	1

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	3	87	2	90	1	123	1
Diseases of the Respiratory System.							
Laryngitis	...	2	...	2	...	2	
Bronchitis	...	1	...	1	...	8	
Broncho-pneumonia ...	...	1	...	1	...	...	
Abscess of lung ...							
Gangrene of lung ...							
Emphysema ...							
Pleurisy							
Empyema							
Other diseases ...	...	...	...	...	...	10	
Diseases of the Digestive System.							
Stomatitis	...	..	...	...	...	1	
Caries of teeth ...	...	...	...	...	...	3	
Pyorrhœa alveolaris ...							
Glossitis							
Sore throat ...							
Inflammation of tonsils	...	...	...	...	...	1	
Gastritis	1	...	...	1	...	8	
Ulceration of stomach							
Hæmatemesis ...							
Dilatation of stomach							
Stricture of stomach ...							
Dyspepsia	...	...	...	...	...	13	
Enteritis	...	1	...	1	...	...	
Appendicitis ...	...	4	1	4	...	...	
Colitis	...	3	...	3	...	2	
Ulceration of intestines	...	1	...	1	...	...	
Sprue							
Hernia							
Diarrhœa	...	...	...	...	...	12	
Constipation ...	...	...	...	...	...	3	
Colic	...	1	...	1	...	3	
Hæmorrhoids ...	...	2	...	2	...	3	
Pancreatitis ...							
Hepatitis—acute ...	...	1	...	1	...	...	
Abscess of liver ...							
Cirrhosis of liver ...	...	1	...	1	...	...	
Jaundice	...	1	...	1	...	...	
Peritonitis							
Ascites							
Other diseases ...	...	1	...	1	1	4	
Carried forward ...	4	107	3	111	2	196	1

EUROPEAN—*cantinued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	4	107	3	111	2	196	1
Diseases of the Lymphatic System.							
Inflammation of lymphatic gland ...	...	4	...	4	...	4	
Splenitis							
Suppuration of lymphatic gland ...	...	1	...	1	...	1	
Lymphangitis ...							
Elephantiasis ...							
Other diseases ...	...	...	...	...	...	1	
Diseases of the Urinary System.							
Acute nephritis ...							
Bright's disease ...	...	2	1	2	...	...	
Pyelitis							
Calculus							
Renal colic							
Cystitis	...	...	...	...	...	1	
Vesical calculus ...							
Suppression	...	1	1	1	...	...	
Hæmaturia							
Chyluria							
Other diseases ...	...	1	1	1	...	...	
Diseases of the Generative System.							
Male organs :—							
Urethritis							
Gleet							
Stricture							
Prostatitis							
Soft Chancre ...							
Condyloma							
Inflammation of scrotum							
Hydrocele							
Orchitis	...	...	...	...	...	1	
Epididymitis ...	...	...	...	...	...	2	
Abscess in testicle ...							
Other diseases ...	...	1	...	1	...	1	
Female organs:—							
Ovaritis							
Ovarian cyst ...							
Endometritis ...							
Displacement of uterus							
Vaginitis							
Carried forward ...	4	117	6	121	2	207	1

EUROPEAN—*continued.*

Diseases.	IN-PATIFNTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	4	117	6	121	2	207	1
Diseases of the Generative System—contd.							
Female organs, *contd.*							
Amenorrhœa ...							
Dysmenorrhœa ...							
Menorrhagia ...	...	1	...	1	...	1	
Leucorrhœa ...							
Other diseases ...							
Affections connected with Pregnancy.							
Abortion	...	...	...	...	...	1	
Other affections ...							
Affections connected with Parturition.							
Delayed labour ...							
Retained placenta ...							
Premature birth ...							
Other affections ...							
Affections consequent on Parturition.							
Post-partum hæmorrhage							
Puerperal septicæmia ...							
Mastitis							
Abscess of breast ...							
Other affections ...							
Diseases of Organs of Locomotion.							
Osteitis	...	1	...	1	...	...	
Arthritis							
Spondylitis							
Bursitis							
Myalgia							
Other Diseases ...	...	...	...	...	...	1	
Diseases of Connective Tissue.							
Cellulitis	...	1	...	1	...	1	
Abscess	...	...	...	..	...	1	
Other diseases ...	...	...	...	...	...	1	
Diseases of the Skin.							
Ulcer	...	..	...	...	...	2	
Urticaria							
Eczema	...	...	...	...	...	3	
Carried forward ...	4	120	6	124	2	218	1

EUROPEAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward ...	4	120	6	124	2	218	1
Diseases of the Skin—continued.							
Boil	...	...	...	...	...	13	
Carbuncle							
Herpes	...	...	...	...	...	1	
Psoriasis							
Oriental sore ...							
Tinea	...	...	...	...	...	3	
Scabies	...	...	...	...	...	2	
Acne							
Prickly heat ...							
Other diseases ...	...	3	...	3	...	3	
Injuries.							
General	...	...	...	...	...	2	
Local	...	5	...	5	...	18	
Tumours.							
Benign							
Malignant							
Malformations ...							
Poisons.							
Vegetable							
Animal							
Other poisons ...							
Parasites.							
Animal Parasites							
Protozoa							
Trematoda (flukes) ...							
Cestoda :—							
Tænia solium ...							
Tænia saginata ...							
Other cestodes ...							
Nematoda :—							
Ascaris							
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Filaria							
Strongylus ...							
Ankylostoma ...	...	...	...	...	...	1	
Oxyuris							
Other nematodes ...							
Insecta :—							
Insects producing Myiasis							
Dematophilus penetrans ...	...	...	...	...	...	1	
Other insects ...							
Total ...	4	128	6	132	2	262	1

V—RETURN OF DISEASES AND DEATHS.—AFRICAN.

Diseases.	*IN-PATIENTS.					OUT-PATIENTS.	
	§Remaining in Hospital at end of 1925.	Total Admissions.	Total Deaths.	‡Total Cases treated.	‖Remaining in Hospital at end of 1926.	Cases treated. New.	Deaths.
Infective Diseases.							
Beri-beri	1	1	1	2	...	...	
Cerebro-spinal fever ...							
Chicken-pox ...	2	37	...	39	...	25	
Cholera							
Dengue							
Diphtheria							
Dysentery :—							
(*a*) Amœbic ...	...	17	1	17	...	37	
(*b*) Bacillary ...							
(*c*) Type not determined ...	...	27	1	27	1	106	
Endocarditis—infective							
Enteric							
Erysipelas							
Gonorrhœa	...	73	...	73	...	1,626	
Influenza	...	40	...	40	...	11	1
Kala-azar							
Leprosy :—							
(*a*) Nodular ...	3	5	...	8	3	10	
(*b*) Anæsthetic ...	1	2	...	3	2	22	
Malaria :—							
(*a*) Tertian ...	...	2	...	2	...	134	
(*b*) Quartan ...	...	...	...	...	...	11	
(*c*) Aestivo-autumnal	2	22	1	24	...	448	
(*d*) Chronic ...	...	...	...	...	...	228	
(*e*) Type not determined ...	2	203	3	205	2	3,103	2
Blackwater fever ...	...	1	...	1	...	2	1
Measles	...	...	...	...	...	5	
Papataci fever ...							
Plague							
Pneumonia	11	56	16	67	6	35	
Pyrexia of uncertain origin	...	29	1	29	...	502	
Rabies							
Relapsing fever ...							
Septicæmia	1	3	4	4	...	...	
Smallpox							
Tetanus							
Syphilis :—							
(*a*) Primary ...	...	10	...	10	2	68	
(*b*) Secondary† ...	8	52	2	60	7	622	
(*c*) Inherited ...	2	1	...	3	...	110	
Tetanus	1	20	11	21	3	...	
Trypanosomiasis (sleeping sickness) ...	...	3	...	3	1	1	
Tuberculosis ...	6	64	27	70	3	101	
Undulant fever ...							
Carried forward ...	40	668	68	708	30	7,207	4

*In-patients are those treated in hospitals and institutions, and the term does not apply to those treated in their own quarters, even though they would ordinarily be in-patients if there were suitable accommodation.

†"Tertiary Syphilis" is a term sometimes applied to the latter symptoms.

‡"Total cases treated" include those remaining in hospital at the end of the previous year.

§i.e., the year previous to that for which the return is made.

‖The figures in this column to be carried on to the next year's return.

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
INFECTIVE DISEASES.—*continued.*							
Brought forward ...	40	668	68	708	30	7,207	4
Whooping cough ..	...	3	...	3	...	77	
Yaws	1	11	...	12	...	415	
Yellow fever ...							
Other diseases ...	...	1	1	1	...	5	
INTOXICATIONS.							
Alcoholism	...	3	...	3	...	18	
Morphinism ...							
Other intoxications ...							
GENERAL DISEASES.							
Anæmia	...	7	4	7	...	496	1
Anæmia, pernicious ...	...	1	1	1	...	...	
Diabetes	...	1	...	1	...	1	
Exophthalmic goitre ...	...	...	...	...	...	18	
Gout							
Leucocythæmia ...							
Lymphadenoma ...							
Myxœdema ...							
Purpura							
Rickets	...	...	...	...	...	12	
Scurvy							
Other diseases ...	17	136	26	153	20	2,352	
LOCAL DISEASES. *Diseases of the Nervous System.*							
Sub-section 1.—Diseases of the Nerves :—							
Neuritis	3	4	...	7	2	21	
Meningitis ...							
Myelitis							
Hydrocephalus ...	...	...	...	...	...	1	
Encephalitis ...							
Abscess of brain ...							
Congestion of brain	1	...	1	1	...	...	
Other diseases ...	...	9	1	9	...	146	
Sub-section 2.—Nervous Disorders and Diseases of Undetermined Nature :—							
Apoplexy ...	1	...	...	1	...	2	
Paralysis ...	8	24	8	32	8	26	
Chorea	...	...	...	...	...	2	
Epilepsy	...	9	1	9	1	32	
Neuralgia ...	...	8	...	8	...	279	
Carried forward ...	71	885	111	956	61	11,110	5

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	71	885	111	956	61	11,110	5
Hysteria	...	...	...	...	...	14	
Other diseases ...	1	19	3	20	1	287	
Sub-section 3.—Mental diseases.—							
Idiocy							
Mania	...	1	...	1	...	1	
Melancholia ...							
Dementia ...	4	6	1	10	4	1	
Delusional insanity...	...	5	...	5	...	2	
Other diseases ...	...	4	...	4	...	5	
Diseases of the Eye.							
Conjunctivitis ...	1	29	..	30	1	634	
Keratitis	1	1	...	2	...	25	
Ulceration of cornea ...	...	...	...	...	...	20	
Iritis	...	1	...	1	...	19	
Optic neuritis ...	...	...	...	...	...	1	
Cataract	...	3	...	3	1	7	
Other diseases ...	3	4	...	7	4	120	
Diseases of the Ear.							
Inflammation ...	...	5	...	5	...	127	
Other diseases ...	...	4	...	4	...	579	
Diseases of the Nose.							
Inflammation ...	...	1	...	1	..	278	
Other diseases ...	...	7	...	7	...	267	
Diseases of the Circulatory System.							
Pericarditis ...	...	...	...	...	...	4	
Endocarditis ...	...	...	...	...	...	4	
Valvular Disease :—							
(*a*) Mitral ...	...	42	20	42	4	52	
(*b*) Aortic ...	...	2	...	2	1	7	
(*c*) Tricuspid ...							
(*d*) Pulmonary ...							
Arterio-sclerosis ...	...	...	...	...	...	4	
Aneurism	...	...	...	...	...	3	
Other diseases ...	...	9	1	9	1	204	
Diseases of the Respiratory System.							
Laryngitis	...	...	...	...	...	24	
Bronchitis	2	143	5	145	1	6,138	1
Broncho-pneumonia ...	...	22	7	22	...	18	4
Abscess of lung ...							
Gangrene of lung ...							
Emphysema ...							
Carried forward ...	83	1,193	148	1,276	79	19,955	10

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	83	1,193	148	1,276	79	19,955	10
Diseases of the Respiratory System—continued.							
Pleurisy	1	13	...	14	3	129	
Empyema	1	3	2	4	1	...	
Other diseases ...	1	2	2	3	1	1,436	
Diseases of the Digestive System.							
Stomatitis	...	...	...	...	...	310	
Caries of teeth ...	...	4	...	4	...	1,178	
Pyorrhœa alveolaris ...	...	2	...	2	...	48	
Glossitis	...	...	...	...	...	54	
Sore throat ...	...	1	...	1	...	205	
Inflammation of tonsils	...	4	1	4	...	310	
Gastritis	2	5	...	7	...	147	
Ulceration of stomach							
Hæmatemesis ...	...	...	...	...	...	2	
Dilatation of stomach							
Stricture of stomach ...							
Dyspepsia	...	25	...	25	5	3,273	
Enteritis	...	11	6	11	1	49	
Appendicitis ...	...	3	...	3	...	3	
Colitis	...	...	...	...	...	20	
Ulceration of intestines							
Sprue							
Hernia	1	54	7	55	...	310	
Diarrhœa	...	61	10	61	...	924	1
Constipation ...	...	18	...	18	...	4,734	
Colic	...	27	...	27	...	808	
Hæmorrhoids ...	...	2	...	2	...	90	
Pancreatitis ...							
Hepatitis, acute ...	...	20	1	20	...	46	
Abscess	...	3	...	3	...	2	
Cirrhosis	...	1	1	1	...	1	
Jaundice	...	4	1	4	...	35	
Peritonitis	...	5	1	5	..	2	
Ascites	2	7	5	9	1	31	
Other diseases ...	...	30	3	30	...	495	2
Diseases of the Lymphatic System.							
Splenitis	...	8	1	8	...	314	
Inflammation of lymphatic gland ...	2	53	...	55	2	291	1
Suppuration of lymphatic gland ...	1	...	...	1	...	70	
Carried forward ...	94	1,559	189	1,653	93	35,272	14

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
GENERAL DISEASES—*continued.*							
Brought forward ...	94	1,559	189	1,653	93	35,272	14
Diseases of the Lymphatic System—continued.							
Lymphangitis ...	...	...	...	...	...	6	
Elephantiasis ...	3	22	4	25	2	55	
Other diseases ...	...	6	...	6	1	95	
Diseases of the Urinary System.							
Acute nephritis ...	...	27	12	27	1	70	
Bright's disease ...	...	1	...	1	1	16	
Pyelitis							
Calculus							
Renal colic ...							
Cystitis	...	14	2	14	...	69	
Vesical calculus ...							
Suppression ...	...	...	...	...	...	8	
Hæmaturia	...	1	...	1	...	23	
Chyluria							
Other diseases ...	1	9	2	10	...	129	
Diseases of the Generative System.							
Male Organs :—							
Urethritis	...	1	...	1	...	64	
Gleet	...	...	...	...	...	26	
Stricture	1	18	3	19	1	73	
Prostatitis	...	1	1	1	...	...	
Soft chancre ...	. .	9	...	9	...	162	
Condyloma	...	...	...	...	...	1	
Inflammation of scrotum	...	7	...	7	1	27	
Hydrocele	...	5	...	5	1	141	
Orchitis	...	25	...	25	1	258	
Epididymitis ...	...	...	...	...	...	59	
Abscess of testicle ...	...	3	...	3	1	35	
Other diseases ...	2	41	...	43	1	222	1
Female Organs:—							
Ovaritis	...	1	...	1	...	16	
Ovarian cyst ...	...	1	...	1	...	1	
Endometritis ...	...	12	1	12	2	27	
Displacement of uterus	...	...	...	...	...	1	
Vaginitis	...	2	...	2	1	24	
Amenorrhœa ...	...	2	...	2	...	303	
Dysmenorrhœa ...	...	3	...	3	...	127	
Menorrhagia ...	...	1	...	1	...	59	
Leucorrhœa ...	...	5	...	5	...	93	
Other diseases ...	...	17	...	17	...	219	
Carried forward ...	101	1,793	214	1,894	107	37,681	15

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES—*continued.*							
Brought forward ...	101	1,793	214	1,894	107	37,681	15
Affections connected with Pregnancy.							
Abortion	1	14	...	15	...	25	
Other affections ...	1	49	...	50	1	191	
Affections connected with Parturition.							
Delayed labour ...	...	...	...	...	...	7	
Detained placenta ...	...	3	1	3	...	2	
Premature birth ...							
Other affections ...	2	176	1	178	5	3	
Affections consequent on Parturition.							
Post-partum hæmorrhage							
Puerperal septicæmia							
Mastitis	...	8	...	8	...	57	
Abscess of breast ...	...	5	...	5	...	29	
Other affections ...	...	3	2	3	...	16	
Diseases of Organs of Locomotion.							
Osteitis	2	11	...	13	...	150	
Arthritis	1	18	...	19	3	901	
Spondylitis							
Bursitis	...	...	...	...	...	7	
Myalgia	...	14	....	14	...	2,362	
Other diseases ...	2	47	...	49	5	2,041	
Diseases of Connective Tissue.							
Cellulitis	2	52	1	54	2	155	
Abscess	3	79	1	82	6	883	
Other diseases ...	...	9	1	9	1	103	
Diseases of the Skin.							
Ulcer	24	317	6	341	39	6,554	
Urticaria	...	4	...	4	...	58	
Eczema	...	9	...	9	1	173	
Boil	...	16	...	16	...	398	
Carbuncle	...	2	...	2	...	14	
Herpes	...	1	...	1	...	41	
Psoriasis	...	...	...	...	...	16	
Oriental sore ...							
Tinea	...	1	...	1	...	328	
Scabies	...	2	...	2	...	763	
Carried forward ...	139	2,633	227	2,772	170	52,958	15

AFRICAN—*continued.*

Diseases.	IN-PATIENTS.					OUT-PATIENTS.	
	Remaining in Hospital at end of 1925.	TOTAL.		Total Cases treated.	Remaining in Hospital at end of 1926.	Cases treated.	Deaths.
		Admissions.	Deaths.			New.	
LOCAL DISEASES.—*continued.*							
Brought forward...	139	2,633	227	2,772	170	52,958	15
Diseases of the Skin—continued.							
Acne	...	...	...	...	...	1	
Prickly heat ...	...	...	...	...	...	13	
Other diseases ...	...	8	...	8	...	734	
Injuries.							
General	...	12	1	12	...	363	
Local	12	395	18	407	13	6,666	
Tumours.							
Benign	...	19	...	19	3	110	
Malignant	2	15	3	17	1	21	
Malformations ...	...	1	...	1	...	7	
Poisons.							
Vegetable	...	2	...	2	...	...	
Animal	...	...	..	...	...	7	
Other poisons ...	...	1	...	1	...	3	
Parasites.							
Animal Parasites.							
Protozoa							
Trematoda (flukes) ...							
Bilharzia	...	...	...	...	...	163	
Cestoda :—							
Tænia solium ...	...	3	...	3	...	189	
Tænia saginata ...	...	...	...	...	...	73	
Other cestodes ...	...	1	...	1	...	5	
Nematoda :—							
Ascaris	...	19	...	19	...	2,488	
Trichocephalus dispar							
Trichina							
Dracunculus ...							
Filaria	...	2	...	2	...	...	
Strongylus ...	...	...	..	...	...	1	
Ankylostomum ...	1	15	...	16	...	125	
Oxyuris	...	...	...	...	...	4	
Other nematodes ...	...	...	...	...	...	1	
Insecta :—							
Insects producing myiasis ...							
Dematophilus penetrans	...	...	...	...	...	8	
Other insects ...	...	...	...	...	...	26	
No appreciable disease	1	65	...	66	5	205	
Undiagnosed ...	...	2	1	2	1	65	
Total ...	155	3,193	250	3,348	193	64,236	15

VI—SURGICAL OPERATIONS PERFORMED IN CONNAUGHT HOSPITAL IN 1926.

Nature of Operation.	Number.	Cured.	Relieved.	Not Relieved.	Died.
Elephantiasis scroti—removal ...	2	2	...	...	...
Osteo-myelitis of femur	1	1	...	...	...
Abscess—incision	2	2	...	...	...
Amputation	5	5	...	...	...
For empyema	1	...	...	...	1
Dislocation of thumb—tenotomy and reduction	1	1	...	...	...
Removal of sarcoma of abdominal wall	1	1	...	...	...
Sequestrotomy	1	...	1	...	...
Ovariotomy	1	1	...	...	...
Urethral Polypus—suprapubic puncture	1	...	...	...	1
Crushed fingers—removal	1	1	...	...	...
Herniotomy	1	...	1	...	...
Suturing of wounds	1	1	...	...	...
Appendicitis—laparotomy	1	...	...	...	1
Hydrocele—radical cure	1	1	...	...	...
Compound fracture—suturing and splinting	1	1	...	...	...
Removal of tumour	1	1	...	...	...
For cut throat	1	...	...	...	1
Breaking and resetting of fracture ...	1	1	...	...	...
Circumcision	1	1	...	...	...
Incision of septic hand	1	1	...	...	...
Growth of foot	1	1	...	...	...
Dacryocytitis incision and drainage ...	1	...	1	...	...

VII—SURGICAL OPERATIONS PERFORMED IN THE EUROPEAN HOSPITAL.

——	Number.	Cured.	Relieved.	Not Relieved.	Died.
No operations were performed.					

VIII—SURGICAL OPERATIONS PERFORMED ELSEWHERE REPORTED BY MEDICAL OFFICERS.

——	Number.	Cured.	Relieved.	Unrelieved.	Died.
Port Loko	3	2	...	...	1
Daru	73	56	10	3	4
Kenema	10	2	8	...	...
Bonthe	16	14	1	...	1
Moyamba	7	7	...	...	...
Bo	19	19	...	...	...
Pujehun	1	1	...	...	...
Makeni	27	26	1	...	...
Kissy	38	36	2	...	...
Kabala	12	11	1	...	...
Kaiyima	4	2	1	...	1
Prisons	66	66	...	...	...
Total	276	242	24	3	7

Appendix I.

CONNAUGHT HOSPITAL LABORATORY REPORT.

During the year 1,004 specimens were sent for examination.

European Hospital and Connaught Hospital.

Blood Infection.—225 films were examined for the malarial parasite ; 61 showed malignant tertian, 1 benign tertian and 2 the quartan parasite.

Of the 2 films suspected of microfilariæ, *F. bancrofti* was found in 1 and *L. loa* in the other.

Chemical, microscopical or spectroscopical exminations were made of 278 specimens of urine.

209 specimens of sputum were examined and of these 68 showed *B. tuberculosis.*

No cases of leprosy were diagnosed from the 4 films sent for examination.

Helminthic Infection.—218 specimens of fæces were examined and the result is as follows :—

Ova of *Ascaris lumbricoides* were found on	36	occasions.
Ova of *Ankylostoma* were found on ...	16	,,
Larvæ of *Strongyloides stercoralis* were found on	7	,,
Ova of *Trichuris trichiura* were found on ...	5	,,
Ova of *Tænia saginata* were found on ...	1	occasion.
Lamblia intestinalis was found on	1	,,
Entamœba coli was found on	1	,,
Trichomonas hominis was found on ...	1	,,

During the year seventeen post-mortem examinations were made. The cause of death in each case is as follows :—

Cause of Death.	Number.
Acute pleurisy	1
Incomplete abortion—hæmorrhage	1
Intestinal obstruction	1
Syncope (2 from starvation, 1 from acute alcoholism)	3
Drowning	1
Shock (1 rupture of liver, 1 severe injuries) ...	2
Rupture of aortic aneurysm	1
Aortic incompetence	1
Pleuro-pneumonia	1
Myocardits	1
Acute lobar pneumonia	1
Peritonitis	2
Cardiac failure	1
Total	17

Miscellaneous.—Daily examination of smears made from the spleen and glands of rats caught in different parts of Freetown have shown no iufection with B. pestis.

Freetown Prison.

Blood Infection.—28 films of suspected malaria were examined and no parasites were found.

No films were submitted for the diagnosis of tuberculosis or leprosy.

Helminthic Infection.—22 specimens of fæces were examined and ova were found in five as follows :—

Ova of *Ascaris lumbricoides*	2
Ova of *Ankylostomidæ*	2
Larvæ of *Strongyloides stercoralis*	1

E. A. RENNER,
Medical Officer-in-charge of Laboratory.

Appendix II.

MATERNITY WARD—CONNAUGHT HOSPITAL.

During the first half of the year the Maternity Ward was successively under the care of Drs. M. C. F. Easmon, Mary Blacklock and W. B. Hughes. Dr. Wright was in charge for the latter half of the year.

There were admitted to the ward 251 patients, of whom 91 had complicated pregnancies and 160 gave birth. Of the labour cases 70 were primiparæ and 90 multiparæ.

The 91 complicated pregnancies were made up as follows :—

False pains and observations	40
Abortion, threatened	6
Abortion, incomplete	2
Abortion, complete	2
Abortion, septic	1
Pre-eclampsia	4
Malaria	4
Albuminuria	2
Miscarriage	2
Threatened miscarriage	2
Pneumonia	2
Leucorrhœa	2
No appreciable disease	2
Ante-partum hæmorrhage	1
Insanity	1
Hydatidiform mole	1
Drowning	1
Injury	1
Jaundice	1
Dysentery	1
Dyspepsia	1
Cough	1
Constipation	1
Vaginal ulcer	1
Herpes	1
Endometritis	1
Pernicious vomiting	1
Pruritus vulvæ	1
Pseudocyesis	1
Retained placenta	2
Baby born before arrival	2

The last three items have been included in this list for convenience.

The following table classifies the lost children :—

Dead Births.	Still Births.	Died.
Macerated	Forceps	Lived 4 days
Pre-eclamptic	Twin premature ...	„ 2 days : forceps
Premature breech	No remark	„ 3 hours
Eclampsia	No remark	„ 21 hours
No remark	No remark	Premature
No remark	No remark	Lived 9 hours
No remark	No remark	„ 36 hours
No remark	No remark	„ 2 days
No remark	No remark	„ 3 days : Imp. Anus.

In previous years the almost total absence of ophthalmia neonatorum has been recorded, but this year it has been extremely prevalent. A few cases were recorded during the first half of the year, but during the third quarter the condition became alarmingly frequent. By the end of the year it had ceased, and up to the time of sending in this report (end of February) no fresh cases have been recorded in the ward.

All the cases responded readily to treatment with cold saline pads applied continuously and changed frequently. The success of this simple treatment depends entirely on the co-operation of the mother and nurse in changing the pads which consist of lumps of cotton wool dripping with saline solution. The effectiveness of this treatment and the nature of the outbreak suggest that these were not cases of gonococcal ophthalmia.

There were no deaths among the complicated pregnancies. Amongst the 160 labour cases there was 1 maternal death due to collapse following ante-partum eclampsia three days after delivery. There were 32 complicated labours : 3 were instrumental, the remaining 128 were normal.

The 160 labour cases resulted in the birth of 167 children, there being 8 twin labours, 1 of which was in a lunatic transferred from the asylum after having given birth to 1 twin.

Of the 167 children born in the hospital, 10 were dead born, 7 stillborn and 9 died after birth. The term dead born is used to distinguish a child that had obviously been dead "in utero" for some time, as evidenced by skin peeling or discolouration of the cord, from a child that was possibly lost in the birth.

The average weight at birth of the apparently healthy child was 6 lb. 10 ozs.—premature and twin children not being included.

The average stay in hospital of each patient was 6·2 days, exactly the same figure as for last year.

The abnormal labour cases were made up as follows :—

Dead birth	... ...	7—1 eclampsia
Twins ...	... ...	8—1 forceps, 1 macerated, 1 stillborn
Still birth	... ...	5
Forceps ...	... ...	3—1 stillborn twin, 1 persistent oc. post.
Torn perinæum	... ...	5
A. P. H.	... ...	1
Placenta prævia	... ...	1
Breech ...	... ...	2—1 dead birth premature.

The most important feature designates the case.

E. J. WRIGHT,
Medical Officer-in-charge, Maternity Wara.

Appendix III.

REPORT ON INFANT WELFARE.

(*a*) Connaught Hospital and Campbell Street.

During the first half of the year the Campbell Street Centre was successively under the care of Drs. M. C. F. Easmon and Mary Blacklock. The Friday afternoon Clinic at the Connaught Hospital was under the care of Dr. Easmon. For the latter half of the year Dr. Wright was in charge of both centres.

The number of attendances at the Campbell Street Centre made it necessary to hold two clinics a week. Wednesday morning was chosen as the additional morning, thus for the latter half of the year there were held three clinics each week for the Central and West Wards of the town.

Nurse Edith Thomas acted as District Nurse throughout the year and Mr. M. B. King, Third Class Dispenser, acted as Welfare Clerk.

The monthly attendance at each of the Clinics was as follows :—

	Connaught Hospital.	Campbell Street.
January	333	164
February	275	214
March	240	336
April	184	176
May	200	291
June	162	270
July	263	279
August	353	321
September	333	465
October	475	495
November	453	554
December	279	299

There was a total of 7,414 attendances for the year. There were 834 new individuals, ten more than in the previous year.

The table appended shows month by month the age at which the children are brought to the Clinic for the first time :—

Month.	Under Six Weeks.	Six Weeks to One Year.	One Year to Two Years.	Two Years to Three.	Total.
January	33	7	11	2	53
February	29	19	9	1	58
March	27	25	7	4	63
April	20	24	7	7	58
May	24	31	7	4	66
June	25	20	12	3	60
July	20	31	17	6	74
August	31	44	16	8	99
September	29	42	20	11	102
October	32	40	21	10	103
November	25	20	7	4	56
December	11	24	3	4	42
	306	327	137	64	834

This table, prepared by Mr. M. B. King, shows some important points concerning the Infant Welfare work. It is apparent that the attendances during the first six weeks of life are satisfactory in numbers. This is probably accounted for by the fact that the District Nurse visits all the newly born babies and persuades their mothers to bring them to the clinics. A glance at the next column which is for children up to a year old shows quite a different state of affairs ; here there is a definite seasonal variation suggesting that at this age the children are brought chiefly when sick, for it is obvious that the attendance rapidly increases with the onset of the unhealthy season in July and continues until the end of October. The same factor will be seen to be operating in the remainder of the classes.

The following table shows the percentage of nationalities of the new cases attending the clinics during the year.

Sierra Leonean.	Aborigines.	Krus.	Various.
69 per cent.	17 per cent.	13 per cent.	1 per cent.

Next is a table showing the number and kind of visit paid by the District Nurse each month during the year :—

———	Newly Born.	New Cases.	Repeated Visits.
January	83	80	348
February	69	90	312
March	78	88	348
April	67	75	268
May	57	66	284
June	57	60	284
July	64	75	216
August	98	60	208
September	66	80	210
October	58	44	240
November	59	48	264
December	41	40	288

During December of this year the second Mothercraft and Baby Competition was held. Only regular attendants at the Infant Clinics were allowed to enter. There were 291 entrants who were divided into the following classes :—

Class 1, under six weeks	6
Class 2, up to one year	167
Class 3, up to two years	79
Class 4, up to three years	27
Class 5, twins	12

All these children had to be examined carefully during the preliminary judging, after which a selection of the best was made for presentation to the judges of the final. Sixty-one children were chosen from 291 entrants for presentation to the judges, who were Lieut.-Colonel Hildreth, R.A.M.C., Drs. Pratt and Renner.

It was pleasing to note that enlarged spleens were seen but rarely whereas at the competition last year enlarged spleen was one of the most prominent faults. In the ordinary routine of the clinics it has become apparent that splenic enlargement is now of comparatively rare occurrence, and when it does occur it is usually in an irregular attendant or a new-comer. This speaks well for the extensive use of curative and prophylactic powders of euquinine at clinics of this kind.

A second observation made when weeding out these children for the competition was that late dentition appeared to be the rule. I was not alone in remarking this fact, for Dr. Lowe who examined all the entrants from the eastern ward was in agreement with me on this point.

It was further interesting to note that in class 3, i.e. children from one to two years, 22 per cent. were not walking, 6 per cent. had knock knees and 3 per cent. had bow legs.

In last year's report attention was drawn to the prevalence of rickets in Freetown. Continued observations have fully confirmed the opinion expressed.

E. J. WRIGHT,
Medical Officer-in-charge of Connaught Hospital
and
Campbell Street Infant Welfare Centres.

(*b*) Princess Christian Mission Hospital.

This Clinic was held once weekly—on Thursday afternoons—and was limited to children up to three years of age. There were 3,976 attendances given an average of about eighty children per weekly session. The children were chiefly of Creole parentage, but the proportion of Akus, Temnes, Krus and Mandingoes has risen latterly.

Dr. Lowe acted from July till November.

All children were weighed weekly and each child was then examined by the medical officer. An attempt was made to eliminate healthy children from the medical examination and to devote attention to those obviously ailing; this plan however proved unpopular and was abandoned.

During this year an attempt has been made to increase the educational value of the Clinic. Sister Horsnell, and later Sister Bishop, gave demonstrations to the mothers in the waiting room on the bathing of the baby and the care of the umbilical cord, and talked to them about feeding, clothing and general hygiene.

Almost all the children are breast fed, most of them up to two years, some even longer.

Of the diseases seen malaria was the most prevalent and debilitating, and was generally associated with definite bronchial catarrh. Whooping cough and broncho-pneumonia occurred fairly frequently.

There were a number of premature infants attending the Clinic and several congenital syphilitic children. From the evidence provided by the ante-natal and gynæcological work at this hospital, it would appear that syphilis is taking a considerable part in fœtal and infant mortality and in morbidity among children.

A few cases of definite and severe rickets were seen and also several definite milder cases. The exact amount of this disease, however, will remain difficult to estimate until it is possible to define rickets clearly. What degree of symptoms is to receive the label depends very largely on the examiner.

Of the children attending this clinic 80 per cent. have the anterior fontanelle closed at 14 months. The time of teeth eruption is variable. Although on the average it is delayed—nevertheless almost all the children have twenty teeth at two years.

Infection with ascaris worms is common in the older children, and large numbers of worms may be present, e.g. one child passed forty-nine another thirty-five worms.

Pathological conditions of the skin—scabies, eczema, irritation—rashes from string necklaces and charms, sores from insect bites, are prevalent.

Occasional cases of gonococcal ophthalmia were noted and several cases of gonococcal vulvitis—one with severe cystitis.

M. BLACKLOCK,
Medical Officer-in-charge of East Ward Infant Welfare Centre.

Appendix IV.

REPORT ON THE FREETOWN PRISON.

Dr. Dimock was in charge from 21st July to 14th August, when he was absent on local leave and Dr. Wright took over. Dr. Dimock again relieved Dr. Wright and was in charge up to the end of the year.

Health of Prison Officers.

European.—Satisfactory. One was treated for malaria and placed on sick list for six days.

African.—Fair; fifty-eight were treated, seventeen of whom were placed on the sick list: seven transferred to the Connaught Hospital for admission, of whom one was invalided from the Service for osteo-arthritis of right hip-joint.

Health of Prisoners.

The general health of the prisoners, including those transferred to the Cape Sanitary Station, has been very satisfactory. The number of admissions to hospital was 70 and the number taken under observation and treatment was 218. The daily average on sick list was 7 on a daily average prison strength of 298.

Throughout the year there was no outbreak of any disease. Chicken-pox was discovered in a new-comer to prison: he was immediately isolated, active measures taken, and no other prisoner had the infection.

There were 21 cases of diarrhœa treated at different periods during the year. No cases of dysentery have occurred during the whole year nor were there any of beri-beri.

Two prisoners were admitted with leprosy and were isolated and treated with Moogrol with good results.

Five deaths took place during the year. One from toxæmia following cancer of the liver, one from senility and malaria, one from carcinoma of liver, one from myocardial degeneration following chronic nephritis, and one from acute bronchitis.

Only one post-mortem examination was done.

Four prisoners were transferred to the Lunatic Asylum, Kissy, under Certifiate of Emergency.

One prisoner was released on medical grounds on the 5th August on the Fiat of His Excellency the Governor.

Number of prisoners executed during the year was eight.

Weight of prisoners ranged between 84 and 200 lb.

The total number of prisoners vaccinated during the year was 220: successful 160.

The total number of attendances at the dispensary—7,776.

The sanitary condition of the prison remained excellent.

Visits:—

(1) Medical Delegates of the League of Nations accompanied by the Honourable Director of Medical and Sanitary Services.

(2) His Excellency the Governor.

A statistical return is attached.

Statistical Return For the Year 1926.

In-patients.

In hospital at end of December, 1925	1
Admitted during the year	70

	March Quarter.	June Quarter.	September Quarter.	December Quarter.	Total.
Admission	19	17	20	14	70
Cured	12	12	8	8	40
Relieved	5	4	9	3	21
Not relieved	—	—	1	...	1
Died	1	2	2	...	5
Remaining in hospital at end of 1926	—	—	...	5	5
Under observation and treatment (not admitted into hospital)	33	60	73	52	218

Deaths :—Causes as follows :—

Toxæmia following cancer of the liver	1
Senility and malaria	1
Carcinoma of liver	1
Myocardial degeneration following chronic nephritis	1
Acute bronchitis	1

Out-patients.

	New Cases.	Subsequent Attendances.
March quarter	114	752
June quarter	171	1,069
September quarter	205	1,987
December quarter	227	2,094
Total	717	5,902

Daily average number of prisoners .—

Males	294·24
Females	3·84
Total ...	298·08

	New-comers Examined.	Remands and Trials Examined.	Solitary Confinement.	Corporal Punishment.	Execution.
March quarter ...	198	97	65	3	2
June quarter	232	91	100	2	3
September quarter ...	244	103	100	...	...
December quarter ...	261	76	102	2	3
Total	935	367	367	7	8

E. A. RENNER,
Medical Officer-in-charge of Prison.

Appendix V.

REPORT ON THE WORK OF THE PRINCESS CHRISTIAN MISSION HOSPITAL.

Accommodation remains as in 1925, viz. forty-five beds arranged as follows :—

(1) General Ward	... ...	22 beds (18 beds, 4 cots)
(2) Gynæcological Ward	... ...	7 „
(3) Maternity Ward	... ...	11 „ (4 „ 4 „)
(4) Private rooms for Africans	...	2
(5) European Ward	... ...	3 „ (2 „ 1 cot)

There is also a small labour ward, a dressing theatre, and an operating theatre.

The assistance given to the hospital was continued in 1926 and took the form of a grant-in-aid of £150 ; a contribution of £250 towards the salary of a Lady Medical Officer and gifts of drugs and dressings and issues of equipment to the value of £330. In addition to this, a sum of £250 was promised for urgent alterations to the sanitary system which the Hospital Committee was unable to afford.

During the year there has been a large increase in the number of in-patients, but a decrease in the number of out-patients as compared with 1925.

The figures for out-patient attendances, admissions, etc., are as follows :—

	May to December, 1925.	1926.
Total number of out-patients	11,035	8,429
Admissions	357	557
Deaths	15	27
Births	53	66
Operations	64	...
Infant Welfare Clinic	1,983	3,975

G. LOWE,

Medical Officer-in-charge of Princess Christian Mission Hospital.

Appendix VI.

REPORT ON CONGENITAL RICKETS.

There is still a good deal of misunderstanding about this disease, a disease which was first described in 1649 by a Frisian physician practising in Ireland. The name "Rickets" is from the old English wrickken, to twist, Rachitis, the technical medical term, comes from the Greek, and was suggested by Francis Glisson in 1650, because he thought that the spine was one of the first parts of the body to be affected, the Greek for spine had a similarity of sound to the original name.

Rickets is a disease in which the most prominent change is a disturbance of calcium metabolism, so that calcium salts are no longer deposited in newly forming bone, whether of membrane or cartilaginous origin.

W. L. Kinnear (1) says "the evil effects of rickets in predisposing to infection may take place some weeks at least before an ordinary observer may suspect the presence of the disease. So long as the popular idea of bent legs is the basis of diagnosis, the treatment will often be delayed until too late—the more important part of the disease is the general disturbance of metabolism and it is the result of this that first points to the diagnosis."

Rickets is a disease that can be diagnosed by x-rays and by blood analysis, and is, in certain circumstances, easily observable long before the more obvious deformities manifest themselves, as will be shown later in these notes.

(1.) Kinnear (W. L.)—Maternity and Child Welfare, p. 44, Vol. XI, No. 2.

Rachitie signs in the bones are most evident where growth is most rapid, and it is during the last weeks of intra-uterine life that ossification of the bones of the fœtus is most rapidly taking plaee. Ossification of the ribs and eranium is going on at the fastest rate shortly before birth, so it is in these bones that the manifestations of eongenital rickets should be sought. As the observations detailed in these notes will go to show that the common type of rickets seen in Freetown is eongenital, it is particularly desirable that the maternal metabolism should be kept in mind.

I am of opinion that malaria is not responsible for the very high infant mortality which exists among children here of under 14 days (2), and that syphilis is not an important factor at this age on aecount of the obstetrical histories of the patients and the fact that spironema pallidum was rarely found in the liver of the stillborn infant, or in the placenta of the mother during the investigation referred to above. I have come to the conclusion that, as the children are often born in a weakly state, the cause of this mortality must be a general condition and not a specifie disease.

On examination of the apparently full-time newly-born infant it was found that about 50 per eent. of them showed a condition of deficient ossification of the skull. The posterior fontanelle was often very patent and connected with the anterior fontanelle by a very open sagittal suture, sometimes as much as half an inch wide, often a quarter of an inch. The two halves of the frontal bone were frequently found to be quite unmited and only joined by membrane bridging a gap of an eighth of an inch or more. This condition is well recognized locally and is called "Occa," an Aku word meaning "split head." The people dread this eondition very much and give it a bad prognosis, considering it to be the preeursor of fever and convulsions. It is thought by them to be of dietetic origin, for they attribute it to the eating of the seed of plantain by the mother during pregnancy : but as plantain is not the staple food in Freetown this article of diet is not likely to be a causative factor.

On palpation of the thorax of the newly-born baby, the ribs will often be felt to be definiteiy beaded. The beading is more eonstant than the skull eondition and is sometimes seen quite marked when the skull appears to be normally ossified. I am satisfied that this congenital rib beading is real, because at post-mortem examinations I have been able to demonstrate the beading and at the same time show that, true to the rachitic type, this beading was more marked on the visceral surfaee of the rib than on the skin surface. Figure 1 illustrates the beading as seen from the interior of the thorax. The speeimen was removed from a child apparenty full term, born normally but with the skull condition just described, and who died 24 hours after birth for no apparent reason.

In two cases examined post-mortem it seemed, although beading was quite well marked on both sides of the chest, that it was decidedly more marked on the left than on the right. I eould only aceount for this by the movement imparted to the chest by the cardiac pulsations, whieh might be suffieient to determine a greater amount of epiphyseal swelling in that region. Figure 2 is a horizontal section of the seventh rib shown in figure 1, and demonstrates the extreme degree of deficient ossification of the bone at the bead. The eondition described is congenital rickets and in all probability has an important bearing on the production of non-viable children.

If these children survive, the skull soon heals but is often marked in the process. It is quite eommon to see a child with large parietal eminences and frontal bosses, as illustrated in figure 3, and where the frontal bones have been unmited at birth a ridge of bone is notieeable, marking the line of union of the two halves, *vide* figure 4.

The probable mode of cure of congenital rickets is exposure to sunlight, which no doubt benefits the child in varying degrees whilst the child's skin is acquiring its full pigmentation. It would appear that the full colour is obtained between the third and sixth months of independent life. The rapidity with which the full colour is obtained depends on the amount of exposure to light.

The prevalence of late dentition, beaded ribs, knock knee, bow legs, bossing of the frontal bone, as well as catarrh—all go to show that rickets is playing an important part against the well being of the child.

Harrison's sulcus can frequently be demonstrated in infancy, showing plainly the eversion of the eostal margin of the ribs, whieh eversion is often more marked on the left than on the right. This I think is due to the protection afforded to the right side of the chest by the liver preventing atmospheric pressure from staving in this side. *Vide* figure 5.

If the heads of the infants be measured it will be found that it is the exeeption for the head measurement to be less than the chest. The table on page 55 is a reeord of all the ehildren who attended the Campbell Street Infant Welfare Centre on the morning of 29th December, 1926.

(2.) Wright (E. J.), – Annual Medical and Sanitary Report, 1924, p. 55.

On examination of this list it will be seen that the average measurements at the periods indicated are—

	Head	Chest.
From birth to 6 months	40 cm (42 cm)	38 cm (41 cm)
From 6 months to 1 year	44 cm (47 cm)	45.5 cm (49 cm)
From 1 year to 2 years	46 cm (50 cm)	44 cm (52 cm)
From 2 years to 3 years	46 cm (52 cm)	48 cm (57 cm)

The figures in brackets give the approximate normal measurements in centimetres. It will be seen that from six months to two years the head and chest measurements are the reverse of normal.

These observations would not be complete if attention was not drawn to the deformed condition of the lower extremities manifest in the adult. Any one who has walked through the streets of Freetown must have been struck by the number of adults with either bow legs or knock knees. The former condition is common and has a local name, "kobo" foot. It is worthwhile noting that the prevalence of the two deformities helps to disprove the statement sometimes made that the leg deformity is produced by the method of tying the child on the back, although there is no doubt that this method of carrying the child in one position with arms and legs motionless and with very little fresh air to breathe must be a potent factor in keeping up and even in producing rickets.

Number.	Age.	Weight.	Measurement.		Remarks.
		lb. ozs.	Head. cm	Chest. cm	
1	2 Months	9·4	38	37	
2	11 Months	15·8	44½	40	
3	1 Year 3 weeks ...	18·6	43½	44½	
4	1 Year 6 weeks ...	19	47½	42½	
5	4 Months	12	42	38½	
6	10 Months	15·10	45	41	
7	4 Months	15·2	43	43	
8	2¾ Months	15·6	42	39	
9	7 Months	19·6	44½	43	
10	2 Years 2 months ...	27	48	49	
11	1 Year	19·4	45½	41½	
12	1¾ Months	8	38	36	
13	8 Months	12·8	44	39½	
14	5½ Months	12·4	43	39	
15	1 Year 3 weeks ...	16·14	43	42	
16	9½ Months	17·10	43½	44	
17	1 Year 11 months ...	25·8	47	46½	
18	6 Months	18	45	42½	
19	6 Months	15·14	40½	41	
20	6¾ Months	15·14	40½	41	
21	1¾ Years	25·8	48½	46	
22	2½ Months	9	40	35	
23	10 Months	18·6	45	41	
24	1¼ Years	17·6	46½	42	
25	1½ Years	19·8	48	43	
26	5¾ Months	18	42	44½	
27	6 Months	14·4	43½	41	
28	2 Weeks	5·10	34½	32½	
29	1 Year 1 week ...	19·10	46½	41½	
30	1 1½ Years	23	46	44½	
31	1¾ Months	8	38½	35½	
32	1 Year 2 weeks ...	15	46½	41½	
33	11 months	13·12	44½	39½	
34	2 Years 2 months ...	27·8	46½	47	
35	2 Years 2 months ...	22·12	46	50	
36	2¾ Months	6·4	37	31½	
37	18½ Years	22·12	48½	44½	
38	1 1 0/2 Years	28	46	50	
39	1 Year 8 months ...	22·12	48	47	
40	2 Months	9·	37½	35	
41	11 Months	19·6	43½	43½	
42	6 Months	9·4	41½	35	
43	8 Weeks	9·	39	38	
44	9 Months	17·12	44	41½	
45	4 Months	12·12	41	36½	

In this connexion it is interesting to note that the rachitic restless child carried much on the back shows evidence of its restlessness by the presence of a bald line about an inch wide running across the head. This is where the hair is rubbed off by friction with the upper edge of the cloth used to tie the child on the back. When the child is restless and has not been carried so much on the back, the usual pillow area becomes bald.

Whilst considering the subject of rickets it is essential that all the factors operating in its causation should be considered, consequently we have to consider food, housing, sunlight and the people.

Food.

The staple food of the people of this country is rice and cassava. There is no dairy produce available except the imported varieties, and this is beyond the reach of the ordinary people on account of its cost.

Jansen and Donath, (3) experimenting with white rats in the Dutch Indies, found that rice, polished and unpolished, the white variety of maize, coco-nuts and pea-nuts, when used exclusively in the diet will not prevent the symptoms of A-avitaminosis. They also found that a ration of ten per cent. soy beans, dried fish, and oil-palm oil, would not compensate a diet already poor in Vitamin A. Thus it will be seen that the diet of the people, which consists of all the abovementioned articles, naturally predisposes to rickets, in as much as it is definitely deficient in Vitamin A., and especially in animal fats.

Under the heading of food it should be noted that a recent analysis of the soil and water found in the country shows that the water contains 3·4 per million parts calcium as calcium oxide (4). This is much less than would be expected in the softest drinking water. The soil was found to be practically devoid of calcium.

An analysis of some grasses showed that, compared with average grasses elsewhere, these Sierra Leone varieties contain only about half as much calcium (4).

Housing.

There is general overcrowding in Freetown. Most houses are improperly ventilated. In fact it is difficult to understand how the people are able to live throughout the night in rooms without ventilation of any sort and often with the addition of an open kerosene flame in the room. This remark refers to the poorer class of people but, nevertheless, the people who have houses of more modern type and built with glass windows generally keep the windows shut throughout the night and often during the day.

Sun.

The sun has been considered a specific for rickets, but it should be remembered firstly that "there appears no close relationship between sunshine and the incidents of rickets, for that disease is rarer in the Panama Canal zone than in New York, although the yearly sunshine is greater in the latter locality" (5). Secondly that it is the quality of sunlight and not the quantity that matters. Thirdly that "although the anti-rachitic vitamin can be conferred on various substances by ultra violet radiation—not so the growth promoting vitamin A" (6).

Measurement of ultra violet radiations in Freetown made with Leonard Hills Acetone Methylene Blue Guage during the month of February suggests that most of the chemical rays are given off between 10.30 a.m. and 2.30 p.m., i.e. during the heat of the day when most people, both African and European, avoid the sun. The morning and evening sunshine appeared as a rule incapable of bleaching the blue. These observations refer to what is probably one of the best months for U.V.R. on account of the dryness of the atmosphere and the long hours of sunshine, the average for this month being ten sunshine hours a day. What the result will be during the months of July, August and September when we have but an average of two and a third sunshine hours a day, and a humidity of eighty-seven, remains to be seen.

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3. Jansen (B. C. P.)—and Donath (W. F.), Meded Burgerlijk. Geneesk Dienst in Nedrel,—Indie 1924, pt. 1 pp 46-68.
4. Annual Report, Lands and Forests Department, Sierra Leone.
5. Dixon (W. E.), Jones (C. E. M.) and Lancashire (G. H.) B. M. J. 1925, September 19, 499-500.
6. Hill (L.), Dixon (G. B.) and Colebrook (D. C.) B. M. J. 1925, September 12 470-477.

The Race.

The race is a coloured race and has a natural predisposition to rickets. Emmet Holt in 1903 wrote: "In New York the greatest susceptibility is among the negroes and the Italians. Extreme cases of rickets are almost invariably in one of these nationalities. So far as my observations are concerned, there is no peculiarity in the food of these people, which explains the prevalence of rickets among them, and this must be attributed to race peculiarity" (7).

In the light of our present knowledge the race peculiarity would appear to be the pigmented skin. Recent research by Macht Bell and Elvers (8) has shown that the black skin of the negro is opaque to ultra violet rays, even when exposed to mercury vapour lamp which is four times as rich in U. V. R. as sunlight. Experiments conducted here in Freetown with thin shavings of black skin 1/10th of an inch square, removed without drawing blood, have proved opaque to the direct rays of the sun at noon for half-an-hour when placed on a piece of printing out photographic paper. Nevertheless, we have to consider the possibility of the food-stuffs being naturally irradiated by the sun and thus being rendered potent in the anti-rachitic vitamin. In this connexion it should be remembered that it is a practice of coloured races to smear themselves and their children with vegetable oils and that the oil when spread in a thin layer on the skin is in an ideal state for natural irradiation and absorbtion.

That the people are living on a diet deficient in Vitamin A. is certain, that their diet is deficient in calcium is probable, that the mother is capable of supplying her unborn child with sufficient anti-rachitic vitamin seems unlikely, when we consider the nature of the food she eats together with the fact that her pigmented skin prevents the natural evolution of this vitamin from vitamin A.

It must be borne in mind that it is the practice of the people to suckle their children for a long period, often for two years. This at first sight may appear an advantage in a people lacking dairy produce, but on the other hand this prolonged sucking undoubtedly engenders a predisposition to rickets in the subsequent offspring.

Nature probably so constructed the skin of the African that he would receive sufficient of the healing rays of the sun when unclothed, so it is likely that the dictates of civilization are responsible for the occurrence of rickets in a people who might be expected to be free from it when living under more natural conditions.

Before concluding these notes I would draw attention to another point. There is a close relationship between the absence of Vitamin A. and rickets. It is generally admitted that the people under discussion are living on a diet deficient in Vitamin A. Animal experiments have proved that a maternal diet deficient in Vitamin A. and calcium frequently leads to abortion, premature weakly offspring and non-viable offspring.

It becomes apparent that the whole question of rickets has an important bearing on the question of infant mortality, firstly by directly causing the loss of infant life as explained above and secondly in causing by diminished resistance of the child an increased liability to infection—especially malaria—and when the latter disease is established a vicious circle is started.

After considering these facts the question must be asked, how is it that there are not more cases of serious rachitic bone deformity when all the factors for the production of rickets are present? This is a difficult question and not capable of a single answer. Firstly it must be remembered that the degree of severity of rickets cannot be judged by the amount of bony deformity. Secondly that although all the factors predisposing to rickets are present in the community, we do not know how they interact one with the other. Although very extreme degrees of bone deformity are not often seen here. H. Lhuerre (9) gives information that goes to prove the bones of the West African Negro more brittle than those of the European. He found that in five years the records of the X-Ray Department of the Native Hospital at Dakar showed only two cases of dislocation against 170 cases of fracture.

Thirdly, there is evidence of a curative factor at work during the ages of four to twelve years. A recent survey of 1,000 school children in Freetown showed that their average height was one and a-quarter inches more than the average English school child of the same age (10). The average height of the adult Freetonian is certainly much below that of the average

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7. Emmet Holt the Disease of Infancy and Childhood, p. 250.
8. Macht (D. I.), Bell (F. K.) and Elvers (C. F.) Proc Soc. Experim. Biol. and Med. 1925, v 23.
9. Lhuerre (H.), Bull. Soc. Path. Exot. 1925, Mar. 11. Vol. 18, No. 3, p. 293.
10. Blacklock (M. G.)—Annual Medical and Sanitary Report, 1925, p. 61.

Englishman. This shows that there is something operating at this age which supplements the growth promoting Vitamin A. The most likely explanation of this period of exuberant growth is the young child's liking for activity at this age and his being permitted to go about half clad on account of his tender years. During the latter part of his growth period he slowly adopts a more tardy mode of progression and becomes more sedentary in his habits. This activity and exposure during four to twelve years period must be an important factor in preventing the rickets of infancy progressing.

Finally, one must conclude that a rachitic child living in a country where there is so much malaria and broncho-pneumonia has a poor chance of surviving if its rickets is not healing by the sixth month of independent life.

E. J. WRIGHT,
Medical Officer-in-charge of Connaught Hospital
and
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FIGURE 1. Illustrating :—Rib beading when viewed from the visceral surface of the ribs.

FIGURE 2. Illustrating :—Macroscopical appearance of a beaded rib on horizontal section. Deficient deposition of bone at epiphysis plainly discernible.


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FIGURE 3. Illustrating :—Frontal bossing, large parietal eminences, knock knees and slight pigeon chest.

FIGURE 4. Illustrating :—Ridge of bone where the two halves of Frontal Bone are united. Beading of ribs, which can be seen on the 6th, 7th and 8th ribs in the line produced by joining the two arrows.

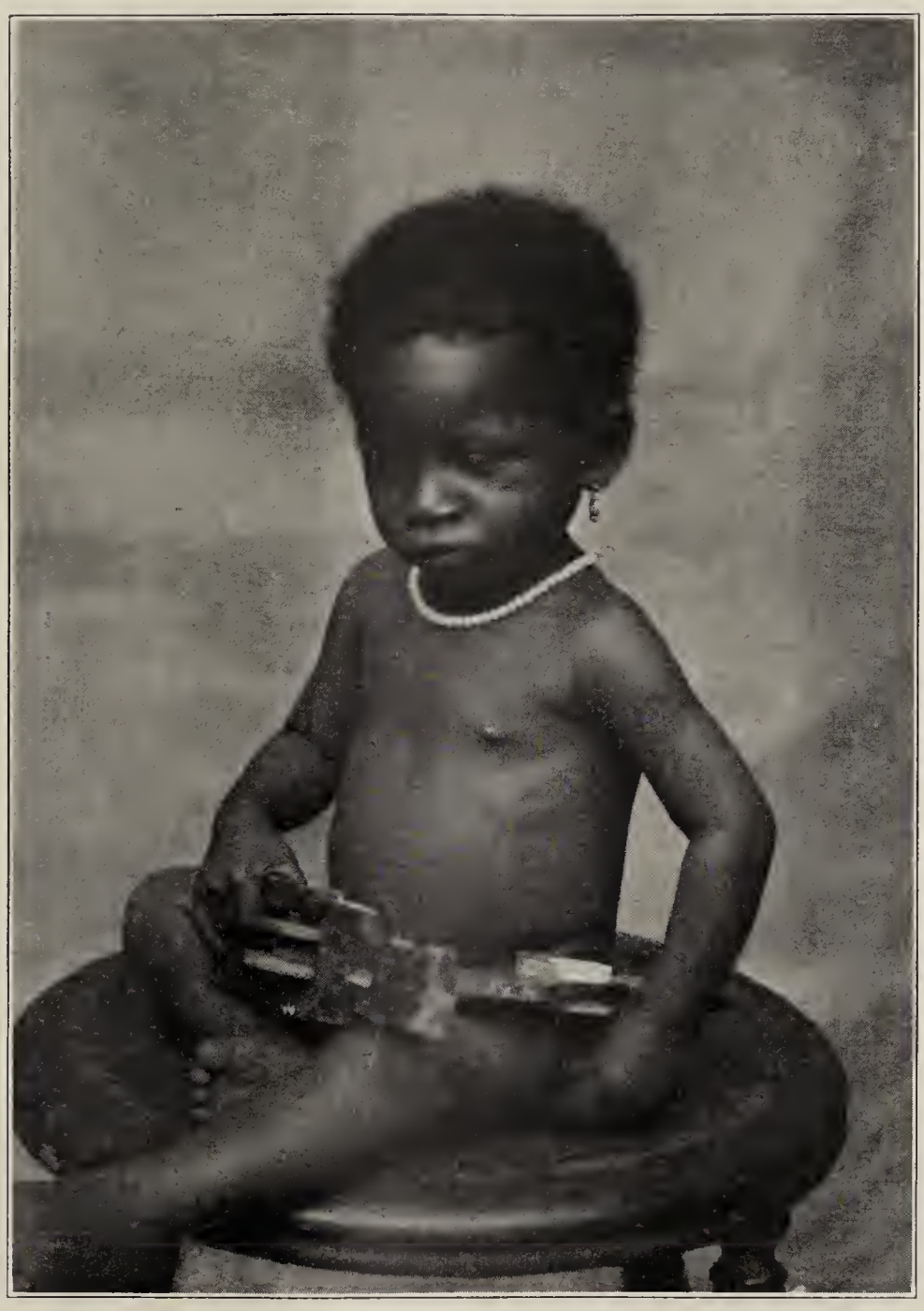
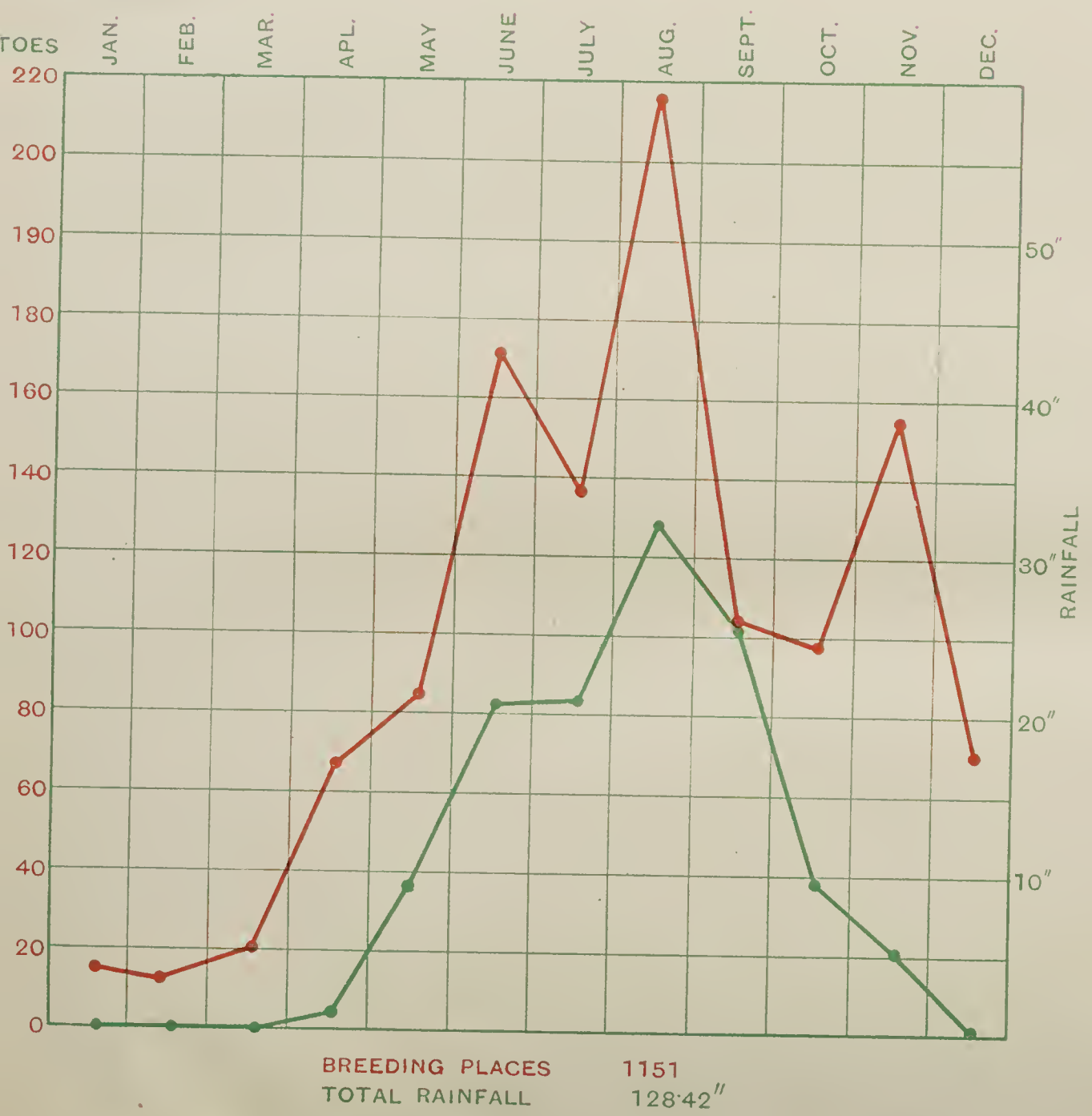


FIGURE 5. Illustrating :—Harrisons Sulcus, slight swelling of the wrists, and prominence of the frontal region.

RAINFALL AND TOTAL MOSQUITO BREEDING PLACES

1926.

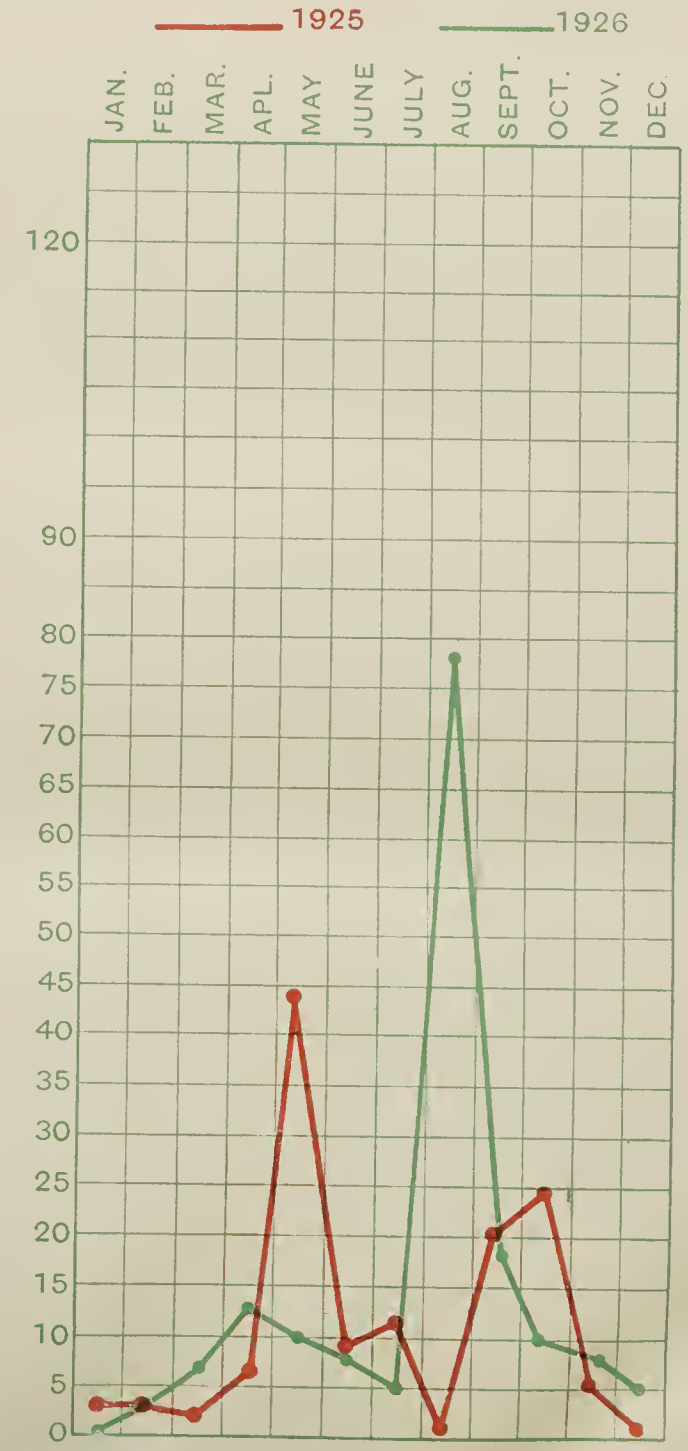


BREEDING PLACES 1151

TOTAL RAINFALL 128·42″

GENUS ANOPHELINAE

NO. OF BREEDING PLACES FOUND.

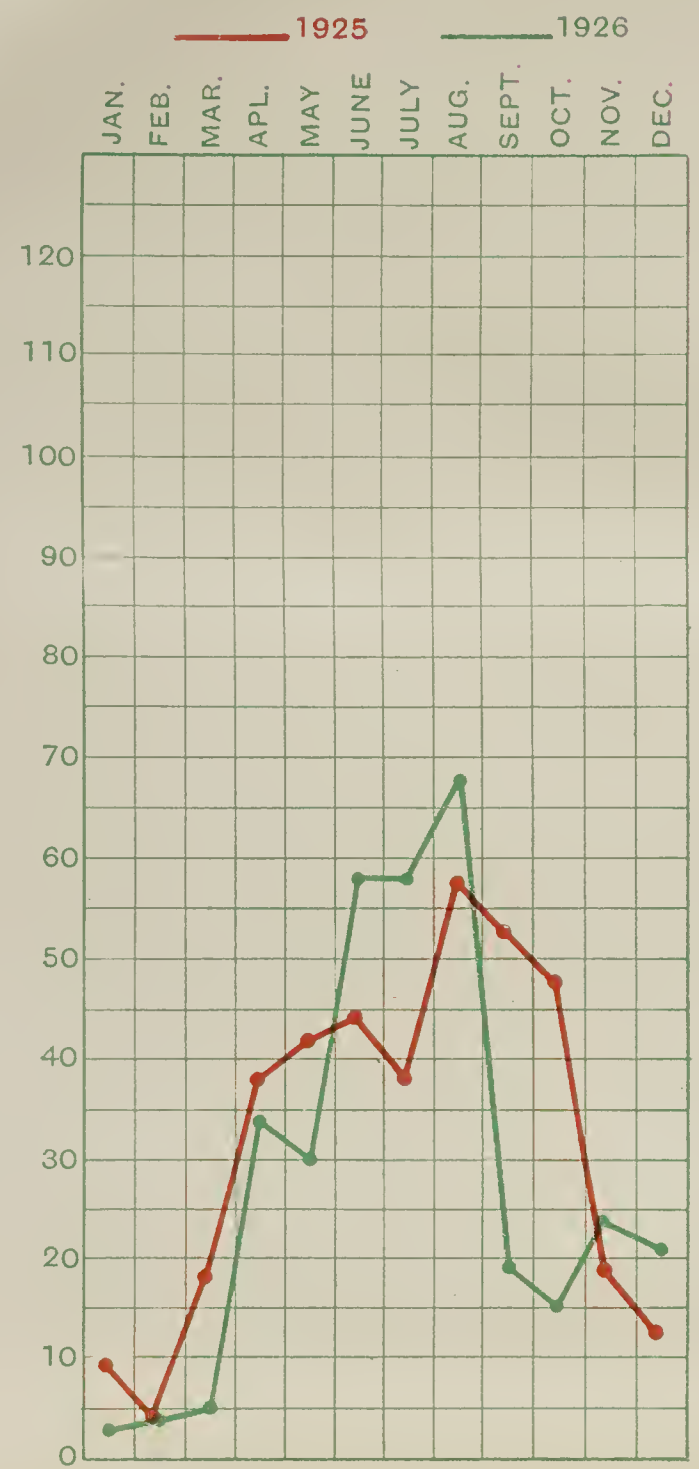


TOTAL 1925.....119

TOTAL 1926.....162

OTHER GENERA

NO. OF BREEDING PLACES FOUND.

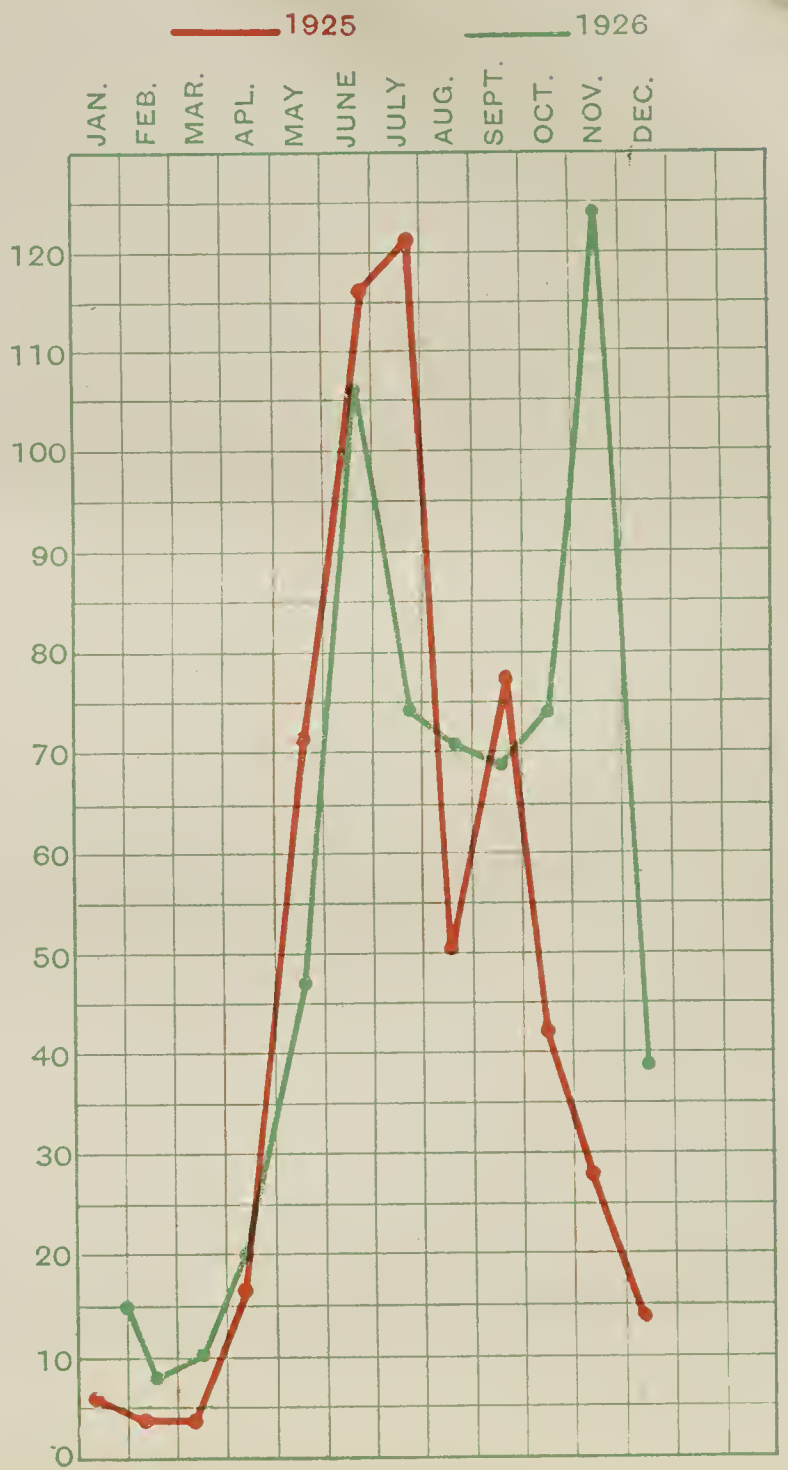


TOTAL 1925.....385

TOTAL 1926.....337

GENUS STEGOMYIAE

NO. OF BREEDING PLACES FOUND.



TOTAL 1925.....546

TOTAL 1926.....652